Transport TN68

B4989

Service Engineer's Manual

PREFACE

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About this Manual

This manual provides you with instructions on installing your Trans--port TN68-B4989. This Manual is intended for experienced users and integrators with hardware knowledge of personal computers.

This manual consists of the following parts:

Chapter1: Provides an introduction to the TN68-B4989 bare--bones, standard parts list, describes the external components, gives a table of key components, and provides block diagrams of the system.

Chapter2: Covers procedures on installing the CPU,memory modules, add on card and hard drives.

Chapter3: Covers removal and replacement procedures for pre-installed components.

Appendix : Describes the differences between motherboard BIOS and system BIOS; introduces how to install the internal HDD, list the cable connection and FRU part tables for reference of system setup; and technical support in case a problem arises with your system.

For information on the mainboard, please refer to the attached mainboard user's manual. You can find the detailed description about jumper and BIOS settings from the mainboard manual.

SAFETY INFORMATION

Before installing and using the Transport TN68-B4989, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots and opening on the unit, which are provided for ventilation.
- Only use the power source indicated on the marking label. If you are not sure, contact the power company.
- The unit uses a three-wire ground cable, which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the pur--pose of this pin. If you outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be in the way of foot traffic.
- Follow all warnings and cautions in this manual and on the unit case.
- Do not push objects in the ventilation slots as they may touch high volta--ge components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manuf--acturer.
- When service or repairs have been done, perform routine safety checks to verify that the system is operating correctly.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Cover the unit when not in use.

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Chapter 1: Overview

1.1 About the TYAN Transport TN68-B4989

Congratulations on your purchase of the TYAN® Transport TN68-B4989, a highly-optimized rack-mountable barebone system. The Transport TN 68-B4989 is designed to support four AMD® Opteron™ 8000 series Dual--core and Quad-core 1207-pin processors and up to 32DIMMs, providing a rich feature set and incredible performance. Leveraging advanced tech--nology from AMD, the Transport TN68-B4989 server system is capable of offering scalable 32 and 64-bit computing, high-bandwidth memory design, and lightning-fast PCI-E bus implementation. The Transport TN68 -B4989 not only empowers your company in today's demanding IT envir--onment but also offers a smooth path for future application usage.

TYAN® is also proud to deliver the Transport TN68-B4989 in flavor while supporting up to eight hot-swap hard drives and one slim ODD. The Transport TN68-B4989 uses TYAN®'s latest chassis featuring a robust structure and a solid mechanical enclosure. All of this provides the Transport TN68-B4989 the power and flexibility to meet the needs of nearly any server application.

1.2 Product Models

Model	HDD Bays	Power supply
B4989T68W8HR-SI	**Removable, 8 HDDs**	**1400W (2+1) Redundant PSU**
B4989T68W8HR-LE	**Removable, 8 HDDs**	**1400W (2+1) Redundant PSU**

1.3 Features

Transport TN68 B4989 (B4989T68W8HR-SI)

System	Form Factor	2U Rackmount
	Chassis Name	TN68
	Dimension (D x W x H)	26.8" x 16.9" x 3.4" (680 x 430 x 87mm)
	Motherboard	S4989WG2NR-SI
	Board Dimension	MEB, 13"x16.2" (330x411mm)
	Gross Weight	32 kg
Front Panel	Buttons	(1) PWR / (1) RST / (1) NMI / (1) ID
	LEDs	(1) PWR / (1) HDD / (2) LAN / (1) ID / (1) Warning
	I/O Ports	(2) USB
External Drive Bay	Type / QTY	3.5" Hot-Swap / (8)
	Supported HDD Interface	1st priority: SAS / 2st priority: SATA II
System Cooling Configuration	FAN	(8) hot-swappable 6cm fans + (1) 6cm system fan
	Air Duct	(1) Air duct
Peripherals	Type of ODD / QTY	Slim-type DVD-ROM / (1)
	Note:	(1) internal 2.5" HDD tray if w/o DVD-ROM (optional)
Power Supply	Type	EPS12V
	Input Range	Full-range AC(100-240V)
	Frequency	60 Hertz
	Output Watts	1400 Watts
	Efficiency	80-plus
	Redundancy	2+1
Processor	Supported CPU Series	AMD 8000 series Dual-Core/ Quad-core processors / Support AMD Dual Dynamic Power Management (DDPM) feature / Support AMD HyperTransport (HT1 and HT3) Technology
	Socket Type / QTY	LGA 1207-pin / (4)
	Thermal Design Power (TDP) wattage	Quad core up to 115W, dual core up to 95W
	System Bus (MHz)	4.4GT/s HyperTransport inter-processor link
Chipset	Chipset	NVIDIA NFP3600 / NFP3050
	Super I/O	Winbond W83627HG-AW
	PCI-E bridge	Pericom PI7C9X130
	HW monitor	(1)W83793G +(2) ADT7476
Memory	Supported DIMM QTY	(32) DIMM sockets

Memory	**DIMM Type / Speed**		Registered ECC DDR2 800/667/533/400 ✧ (800MHz DDR2 speed support available only at 4xDIMMs per CPU or less) ✧ ((8) Dual Rank memory per CPU will have a maximum memory speed of 533MHz)
	Capacity		Up to 256GB
	Memory channel		2 Channels
	Memory voltage		1.8V
Expansion Slots	**PCI-E**		(2) PCI-E x8 slots / (2) PCI-E x16 slots
	PCI-X		(2) PCI-X 133/100MHz slots
	Note:		Total (6) expansion slots support low profile cards
LAN	**Port QTY**		(3)
	Controller		Intel 82571EB dual-port GbE LAN controller
	PHY		Davicom DM9161 10/100 PHY (dedicated for IPMI connection)
Storage	**SAS**	**Connector**	(2) Mini-SAS connectors (support 8 ports)
		Controller	LSI SAS1068E
		Speed	3.0 Gb/s
		RAID	RAID 0/1/1E (LSI Integrated RAID)
	SATA	**Connector**	(6) SATAII
		Controller	MCP55
		Speed	3.0 Gb/s
		RAID	RAID 0/1/0+1/5
Graphic	**Connector type**		D-Sub 15-pin
	Resolution		1600x1200@60Hz
	Chipset		XGI Z9s
	Video RAM		32MB
I/O Ports	**USB**		4 ports (2 at front, 2 at rear)
	COM		1 port
	PS/2		1 stacked connector
	VGA		1 port
	RJ-45		3 ports (1 port for OPMA)
System Monitoring	**Chipset**		(1)W83793G +(2) ADT7476/ W83627HG-AW
	Voltage		Monitors voltage for CPU, memory, chipset & power supply
	Fan		(8) 4-pin headers on Fan board / (1) 4-pin header on MB
	Temperature		Monitors temperature for CPU & system environment
	LED		Over temperature warning indicator / Fan & PSU fail LED indicator
	Others		Chassis intrusion detection / Watch Dog timer support

Server Management	**Onboard Chipset**	Onboard Kira 100
	Kira 100 Feature	KIRA 100 (Single Chip KVM/IP+IPMI processor) / KVM over IP / Video output over LAN (1280x1024) / USB2 high speed interface / Remote CDROM (media) redirect / Remote power on/off, reset and soft off
BIOS	**Brand / ROM size**	AMI / 8Mbit
	Feature	Plug and Play (PnP) /PCI2.3 /WfM2.0 /SMBIOS2.3 /PXE Boot / ACPI 2.0 power management /Power on mode after power recovery / User-configurable H/W monitoring / Auto-configurable of hard disk types / Multiple boot options
Operation System	**OS supported list**	Please refer to our OS supported list.
Regulation	**FCC (Doc)**	Class B
	CE (Doc)	Yes
Operating Environment	**Operating Temp**	10° C ~ 35° C (50° F~ 95° F)
	Non-operating Temp	- 40° C ~ 70° C (-40° F ~ 158° F)
	In/Non-operating Humidity	90%, non-condensing at 35° C
RoHS	**RoHS 6/6 Complaint**	Yes
Package Contains	**Motherboard**	(1) S4989WG2NR-SI
	Manual	(1) User's manual / (1) Quick Ref. Guide
	Installation CD	(1) TYAN installation CD
	CPU CEK	(4) CPU backplates
	Chassis Unit	(1) CCHA-0300, TN68 2U chassis
	Peripheral	(1) CDVD-0060, slim type DVD-ROM
	Cover	(1) CCCV-0160, Front Top cover for TN68 chassis / (1) CCCV-0161, Rear Top cover for TN68 chassis
	HDD Tray	(8) CHDT-0130, Removable 3.5" HDD Tray
	Heatsink / Cooler	(1) CFAN-0094, 6 cm fan / (4) CHSK-0310, LGA 1207 pin CPU heatsink / (8) CFAN-0330, 6 cm fans / (1) CADT-0270, air duct
	Rail kit	(1) CRAL-0120, sliding rail kit for TN68
	Mounting Ear	(1) CEAR-0130, mounting ear kit
	Front Panel board	(1) M1003-ID-RS, front panel board
	Backplane	(1) M1022, Fan adapter board / (1) M1229-PT, SAS/SATA 8 port HDD backplane / (1) M1029, 3-port power backplane
	Power Supply	(3) CPSU-0350, 700W PSU module for 2+1 Red. power solution

Package Contains	Cable	SATA	(2) CCBL-0326, SATA signal cables
		SAS	(2) CCBL-067H, Mini-SAS cables
		DVD-ROM	(1) CCBL-0422, SATA DVD-ROM power cable / (1) CCBL-067K, DVD-ROM SAS cable
		USB	(1) CCBL-0357, USB cable / (1) CCBL-035G, FP USB cable
		FAN	(1) CCBL-146F, Fan BP 2x2P power cable, 300mm / (1) CCBL-146G, Fan BP small 4P power cable / (1) CCBL-039H, fan control cable
		Front Panel	(1) CCBL-072I, FP2 cable / (1) CCBL-072J, FP cable (for M1229 R03) / (1) CCBL-072K, FP cable (for M1229 R04) / (1) CCBL-072H, FP1 cable
		Power Cord	(3) CCBL-0310, US type power cords / (3) CCBL-0300, EU type power cords
		Others	(1) CCBL-146A, MB 2x12P power cable / (1) CCBL-146B, MB 2x4P power cable / (1) CCBL-146C, MB 2x2P power cable / (1) CCBL-146D, HDD BP 2x6P power cable / (1) CCBL-146E, HDD BP 2x2P power cable, 350mm / (1) CCBL-0612, SMbus cable
Optional accessories for future upgrade	Drive Tray		(1) CHDT-0111, Internal 2.5" HDD tray
	Peripheral		(1) CMPT-0170, TN68 DVD dummy cover
	Cable		(1) CCBL-1070, internal 2.5" HDD power cable

Transport TN68 B4989 (B4989T68W8HR-LE)

System	Form Factor	2U Rackmount
	Chassis Name	TN68
	Dimension (D x W x H)	26.8" x 16.9" x 3.4" (680 x 430 x 87mm)
	Motherboard	S4989WG2NR-LE
	Board Dimension	MEB, 13"x16.2" (330x411mm)
	Gross Weight	32 kg
Front Panel	Buttons	(1) PWR / (1) RST / (1) NMI / (1) ID
	LEDs	(1) PWR / (1) HDD / (2) LAN / (1) ID / (1) Warning
	I/O Ports	(2) USB
External Drive Bay	Type / QTY	3.5" Hot-Swap / (8)
	Supported HDD Interface	1st priority: SAS / 2st priority: SATA II
System Cooling Configuration	FAN	(8) hot-swappable 6cm fans + (1) 6cm system fan
	Air Duct	(1) Air duct
Peripherals	Type of ODD / QTY	Slim-type DVD-ROM / (1)
	Note:	(1) internal 2.5" HDD tray if w/o DVD-ROM (optional)

Power Supply	**Type**		EPS12V
	Input Range		Full-range AC(100-240V)
	Frequency		60 Hertz
	Output Watts		1400 Watts
	Efficiency		80-plus
	Redundancy		2+1
Processor	**Supported CPU Series**		AMD 8000 series Dual-Core/ Quad-core processors / Support AMD Dual Dynamic Power Management (DDPM) feature / Support AMD HyperTransport (HT1 and HT3) Technology
	Socket Type / QTY		LGA 1207-pin / (4)
	Thermal Design Power (TDP) wattage		Quad core up to 115W, dual core up to 95W
	System Bus (MHz)		4.4GT/s HyperTransport inter-processor link
Chipset	**Chipset**		NVIDIA NFP3600 / NFP3050
	Super I/O		Winbond W83627HG-AW
	PCI-E bridge		Pericom PI7C9X130
	HW monitor		(1)W83793G +(2) ADT7476
Memory	**Supported DIMM QTY**		(32) DIMM sockets
	DIMM Type / Speed		Registered ECC DDR2 800/667/533/400 ✧ (800MHz DDR2 speed support available only at 4xDIMMs per CPU or less) ✧ ((8) Dual Rank memory per CPU will have a maximum memory speed of 533MHz)
	Capacity		Up to 256GB
	Memory channel		2 Channels
	Memory voltage		1.8V
Expansion Slots	**PCI-E**		(2) PCI-E x8 slots or (1) PCI-E x16 slots
	Pre-install TYAN Riser Card		Install M2089, (2) PCI-E x16 slots w/ x8 signal, 2U riser card (left), support full profile add on cards
	Note:		M2090 optional, (1) PCI-E x16 slots, 2U riser card (left), support full profile add on card
LAN	**Port QTY**		(3)
	Controller		Intel 82571EB dual-port GbE LAN controller
	PHY		Davicom DM9161 10/100 PHY (dedicated for IPMI connection)
Storage	**SAS**	**Connector**	(2) Mini-SAS connectors (support 8 ports)
		Controller	LSI SAS1068E
		Speed	3.0 Gb/s
		RAID	RAID 0/1/1E (LSI Integrated RAID)
	SATA	**Connector**	(6) SATAII
		Controller	MCP55

	SATA	Speed	3.0 Gb/s
		RAID	RAID 0/1/0+1/5
Graphic			D-Sub 15-pin
			1600x1200@60Hz
	Chipset		XGI Z9s
	Video RAM		32MB
I/O Ports	USB		4 ports (2 at front, 2 at rear)
	COM		1 port
	PS/2		1 stacked connector
	VGA		1 port
	RJ-45		3 ports (1 port for OPMA)
System Monitoring	Chipset		(1)W83793G +(2) ADT7476/ W83627HG-AW
	Voltage		Monitors voltage for CPU, memory, chipset & power supply
	Fan		(8) 4-pin headers on Fan board / (1) 4-pin header on MB
	Temperature		Monitors temperature for CPU & system environment
	LED		Over temperature warning indicator / Fan & PSU fail LED indicator
	Others		Chassis intrusion detection / Watch Dog timer support
Server Management	Onboard Chipset		Onboard Kira 100
	Kira 100 Feature		KIRA 100 (Single Chip KVM/IP+IPMI processor) / KVM over IP / Video output over LAN (1280x1024) / USB2 high speed interface / Remote CDROM (media) redirect / Remote power on/off, reset and soft off
BIOS	Brand / ROM size		AMI / 8Mbit
	Feature		Plug and Play (PnP) /PCI2.3 /WfM2.0 /SMBIOS2.3 /PXE Boot / ACPI 2.0 power management /Power on mode after power recovery / User-configurable H/W monitoring / Auto-configurable of hard disk types / Multiple boot options
Operation System	OS supported list		Please refer to our OS supported list.
Regulation	FCC (Doc)		Class B
	CE (Doc)		Yes
Operating Environment	Operating Temp		10° C ~ 35° C (50° F~ 95° F)
	Non-operating Temp		- 40° C ~ 70° C (-40° F ~ 158° F)
	In/Non-operating Humidity		90%, non-condensing at 35° C
RoHS	RoHS 6/6 Complaint		Yes
Package	Motherboard		(1) S4989WG2NR-LE

Contains	**Manual**		(1) User's manual / (1) Quick Ref. Guide
	Installation CD		(1) TYAN installation CD
	CPU CEK		(4) CPU backplates
	Chassis Unit		(1) CCHA-0360, TN68-LE 2U chassis
	Peripheral		(1) CDVD-0060, slim type DVD-ROM
	Cover		(1) CCCV-0160, Front Top cover for TN68 chassis / (1) CCCV-0161, Rear Top cover for TN68 chassis
	HDD Tray		(8) CHDT-0130, Removable 3.5" HDD Tray
	Heatsink / Cooler		(1) CFAN-0094, 6 cm fan / (4) CHSK-0310, LGA 1207 pin CPU heatsink / (8) CFAN-0330, 6 cm fans / (1) CADT-0270, air duct
	Rail kit		(1) CRAL-0120, sliding rail kit for TN68
	Mounting Ear		(1) CEAR-0130, mounting ear kit
	Front Panel board		(1) M1003-ID-RS, front panel board
	Backplane		(1) M1022, Fan adapter board / (1) M1229-PT, SAS/SATA 8 port HDD backplane / (1) M1029, 3-port power backplane
	Power Supply		(3) CPSU-0350, 700W PSU module for 2+1 Red. power solution
	Cable	**SATA**	(2) CCBL-0326, SATA signal cables
		SAS	(2) CCBL-067H, Mini-SAS cables
		DVD-ROM	(1) CCBL-0422, SATA DVD-ROM power cable / (1) CCBL-067K, DVD-ROM SAS cable
		USB	(1) CCBL-0357, USB cable / (1) CCBL-035G, FP USB cable
		FAN	(1) CCBL-146F, Fan BP 2x2P power cable, 300mm / (1) CCBL-146G, Fan BP small 4P power cable / (1) CCBL-039H, fan control cable
		Front Panel	(1) CCBL-072I, FP2 cable / (1) CCBL-072J, FP cable (for M1229 R03) / (1) CCBL-072K, FP cable (for M1229 R04) / (1) CCBL-072H, FP1 cable
		Power Cord	(3) CCBL-0310, US type power cords / (3) CCBL-0300, EU type power cords
		Others	(1) CCBL-146A, MB 2x12P power cable / (1) CCBL-146B, MB 2x4P power cable / (1) CCBL-146C, MB 2x2P power cable / (1) CCBL-146D, HDD BP 2x6P power cable / (1) CCBL-146E, HDD BP 2x2P power cable, 350mm / (1) CCBL-0612, SMbus cable
Optional accessories for future upgrade	**Drive Tray**		(1) CHDT-0111, Internal 2.5" HDD tray
	Peripheral		(1) CMPT-0170, TN68 DVD dummy cover
	Cable		(1) CCBL-1070, internal 2.5" HDD power cable

1.4 Standard Parts List

This section describes the Transport TN68-B4989 package contents and accessories. Open the box carefully and ensure that all components are present and undamaged. The product should arrive packaged as illustrated below.

1.4.1 Box Contents

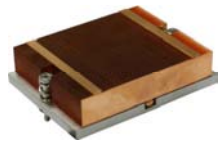
Component	Description
	2U chassis,(8) hot swap HDDbays
	TYAN® Thunder S4989 system board
	PCI holder (B4989T68W8HR-LE SKU)
	1 x slim ODD drive (pre-installed)
	Air Duct
	M1003： LED control board
	M1029 power board

Component	Description
	M1229-PT HDD Backplane
	M1022 Fan BD
	(8) System fans (60mm x 60mm x 38mm)
	(1) PCI-E fan (60mm x 60mm x 38mm)
	(3) 700W power supply modules
	(1)PCI-Ex16 to (2)PCI-Ex8 2U Riser Card (B4989T68W8HR-LE SKU)
	PCI-Ex16 to PCI-Ex16 1U Riser Card (B4989T68W8HR-LE SKU)

1.4.2 Accessories

If any items are missing or appear damaged, contract your retailer or browse to TYAN®'s website for service: http://www.tyan.com. The Web site also provides information on other TYAN® products, plus FAQs, compatibility lists, BIOS settings, and more.

1 x TYAN® Motherboard Drive CD



4 x Heatsink

HDD Screws

Power Cables
Left to right: Europe, US

Mounting Ears & Screws

Barebone Manual & Mainboard Manual

Rail Kit

Rail with Bracket x 2

Screw Sack

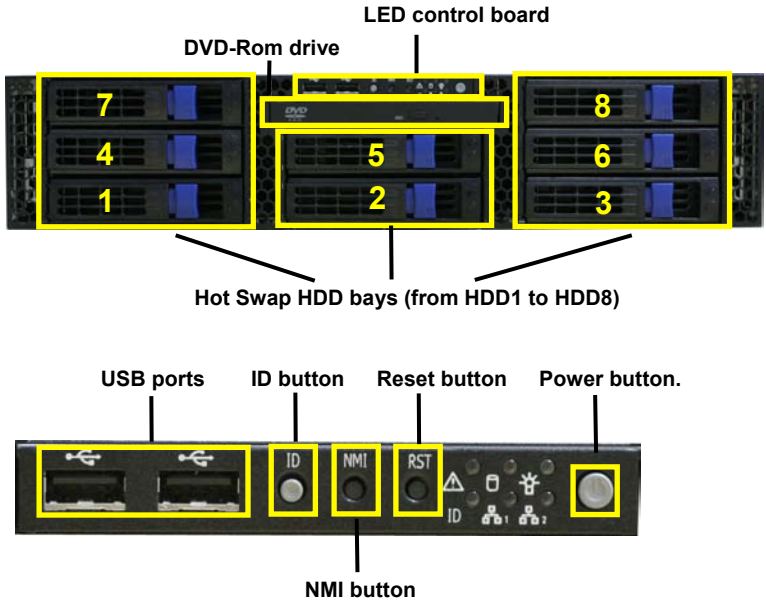
1.5 Optional Parts

Item	Model Number	Picture	Quantity	Description
HDD Tray	CHDT-0111		1	Internal 2.5" HDD Tray
DVD Dummy Cover	CMPT-0170		1	TN68 DVD Dummy Cover (B4989T68W8HR SKU)
Cable Set	CCBL-1070		1	Internal 2.5" HDD Power Cable,100mm (B4989T68W8HR SKU)
M2090 Riser Card	M2090		1	PCI-Ex16 to PCI-Ex16 1U Riser Card (B4989T68W8HR-LE SKU)

1.6 About the Product

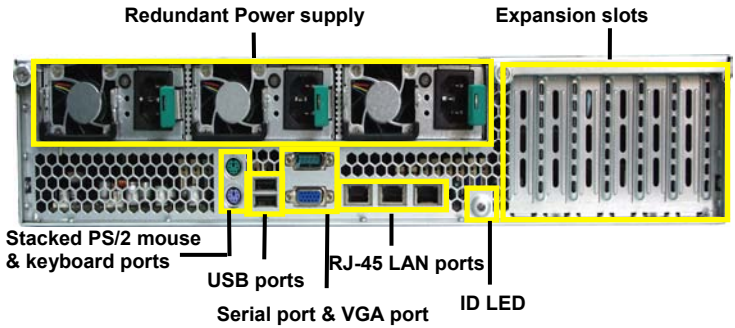
The following views show you the product.

1.6.1 System Front View

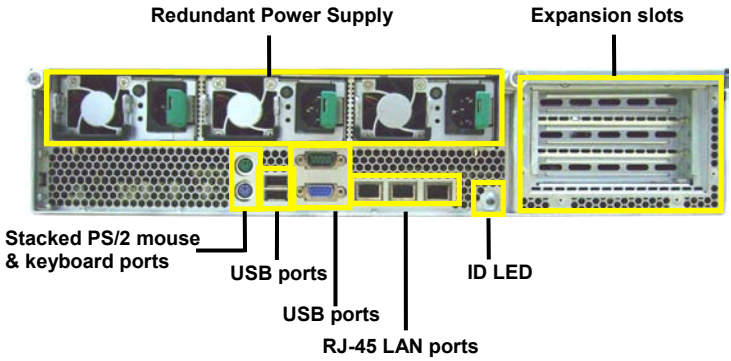


1.6.2 System Rear View

B4989T68W8HR-SI:



B4989T68W8HR-LE



1.6.3 LED Definitions

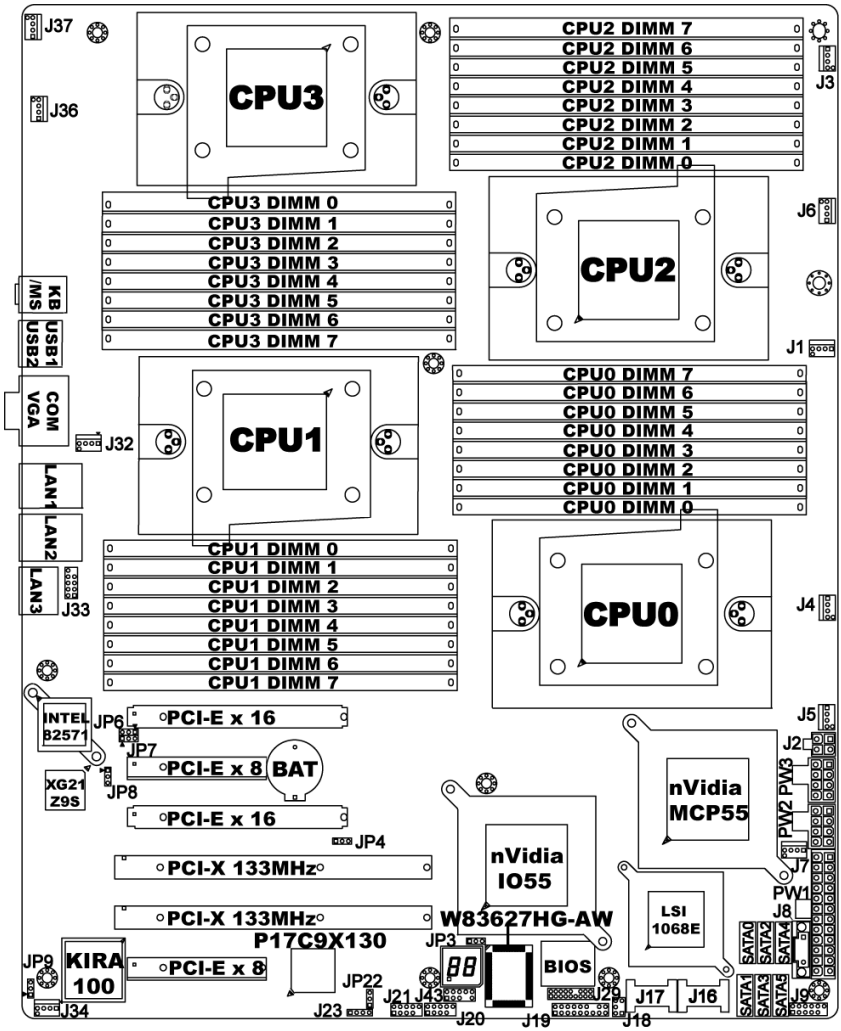
Front Panel

LED	State	Color	Description
Power LED	On	Green	System is turned on
	On	Amber	System is turned off
	Off	Off	Power off
HDD LED	On	Green	HDD power on
	Blinking	Green	HDD active
	On	Amber	HDD error
	Blinking	Amber	HDD rebuild
	Random	Green/ Amber	HDD locate
LAN LED	Blinking	Amber	LAN is active
	off	off	No LAN is linked
ID LED	On	Blue	ID select on
Warning LED	On	Red	Fan fail/PSU fail/Over temperature/Over voltage

Rear I/O LED

LED	State	Color	Description
Power sup-ply module	On	Green	Output On and OK
	Blinking	Green	AC present / Only 5Vsb on(PS Off)
	On	Amber	No AC power to this PSU only or Power supply critical event causing a shutdown: failure, fuse blown, OCP(12V),OVP(12 V), Fan failed
	Blinking	Amber	Power supply warning events where the power supply contin--ues to operate: high temp,high power / high current,slow fan.
	Off	Off	No AC power to all power suppl -ies.
RJ-45 Linkage/ Activity(left)	On	Green	10Mb/100Mb/1000Mb linked
	Blinking	Green	10Mb/100Mb/1000Mb activity
	Off	Off	No LAN linked
RJ-45 Linkage/ Activity(Right)	On	Amber	1000Mb linked/ activity
	On	Green	100Mb linked/activity
	Off	Off	10Mb mode or No LAN linked

1.6.4 Motherboard (S4989WG2NR-SI) Layout

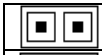
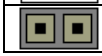


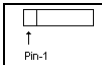
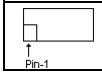
The diagram is representative of the latest board revision available at the time of publishing. The board you receive may not look exactly like the above diagram.

1.6.5 Jumpers & Connectors

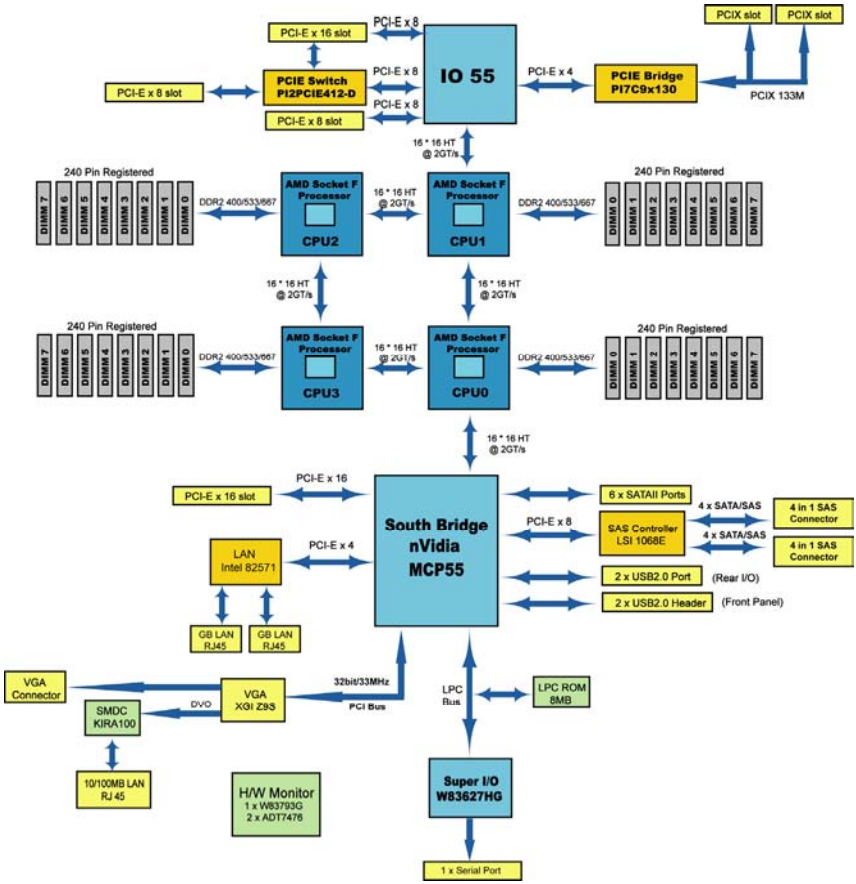
Jumper/Connector	Function
J1/J3/J4/J5/J6/J7/J32/J34/J36/J37	Fan connector
J8	PSMI header
J9	Front Panel header for Barebone System
J18	LCM header
J19	Front Panel header
J20/J21	USB 2.0 header
J23	PCI-X Speed Selection
J29	BBU Fan connector
JP3	Clear COMS
JP4	PCI-E configuration selection
JP8	XG21 VGA Enable/Disable Jumper
JP9	IPMB Pin header
JP22	PCI-X clock frequency 133/100 MHz selection

Jumper Legend

	**OPEN - Jumper OFF**	**Without jumper cover**
	**CLOSED - Jumper ON**	**With jumper cover**

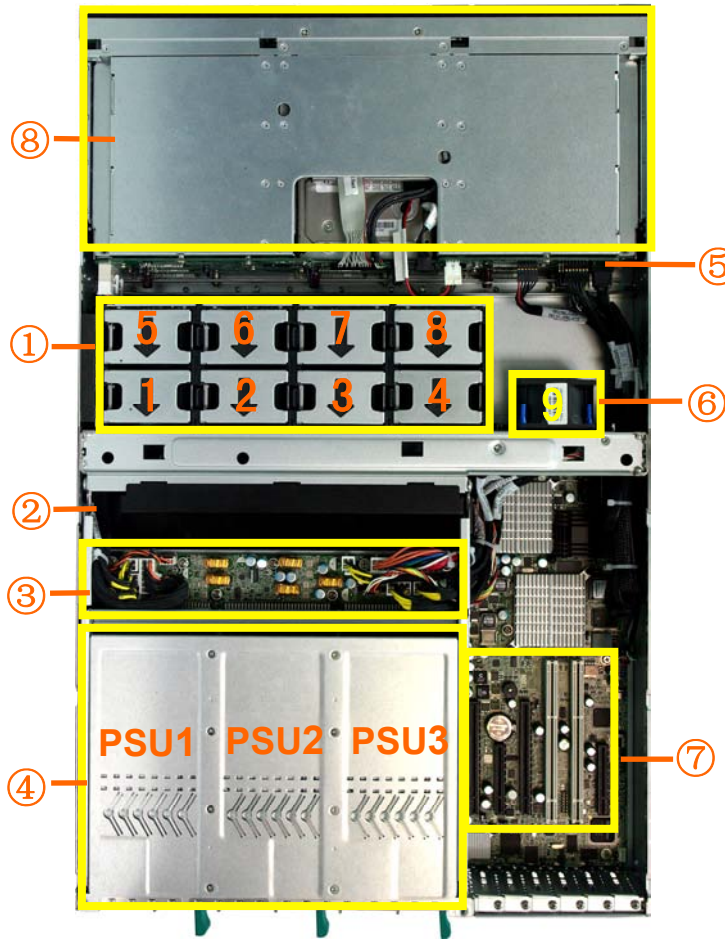
	**To indicate the location of pin-1**
	**To indicate the location of pin-1**

1.6.6 System Block Diagram



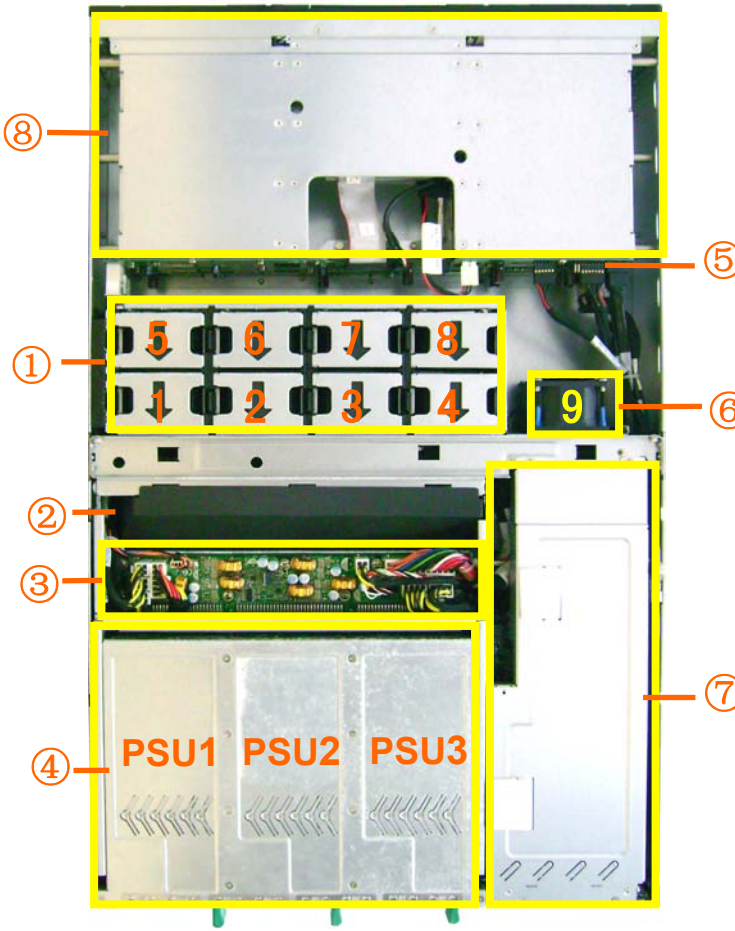
1.6.7 Internal View

B4989T68W8HR-SI:



①/⑥	System Fan
②	Air Duct
③	M1029 Power backplane
④	Power Cage
⑤	M1229-PT HDD backplane
⑦	Expansion slots
⑧	HDD Cage

B4989T68W8HR-LE:



①/⑥	System Fan
②	Air Duct
③	M1029 Power backplane
④	Power Cage
⑤	M1229-PT HDD backplane
⑦	PCI Holder
⑧	HDD Cage

Chapter 2: Setting Up

2.0.1 Before you Begin

This chapter explains how to install the CPUs, CPU heatsinks, memory modules, and hard drives. Instructions on inserting add on cards are also given.

2.0.2 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers prevents them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

2.0.3 Tools

The following procedures require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconne--cted using your fingers. It is recommended that you do not use nee--dlenosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

2.0.4 Precautions

Components and electronic circuit boards can be damaged by discharges of static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport TN68-B4989 or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from the power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.

- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.

- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.

- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.

- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.

- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Note:

All connectors are keyed to only attach one way.

All use the correct screw size as indicated in the procedures.

2.1 Installing Motherboard Components

This section describes how to install components on to the motherboa-rd, including CPUs, memory modules and add on cards.

2.1.1 Removing the Chassis Cover

Follow these instructions to remove the Transport TN68 chassis cover.

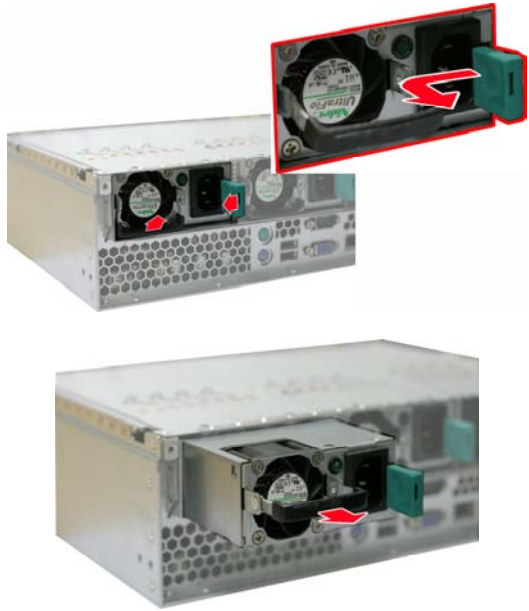
1. Thumb two screws on the back side as shown in the small diagram. Then slide the rear top cover out.

2. Draw the two buttons on the front top cover in the direction as the following photo shows and remove the top cover.

2.1.2 Installing the CPU and Heatsink

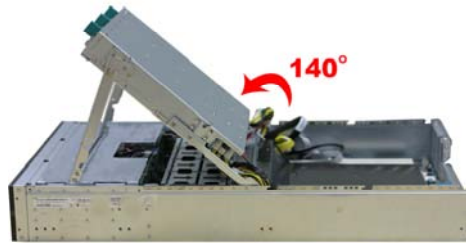
Follow the steps below on installing CPUs and CPU heatsinks.

1. Pull out the three power supplies: press the button on top of the power supply and pull out the supply in the direction the arrow shows you.



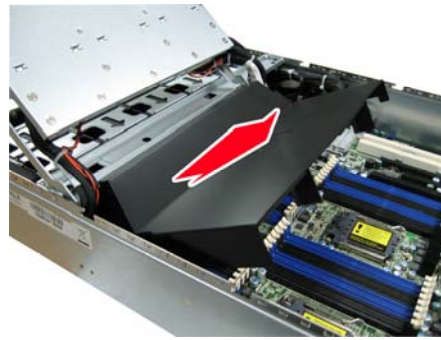
2. Unscrew the power cage as the image shows you;

3. Lift the rack of the power cage and bend it back to an angle of about 140°;

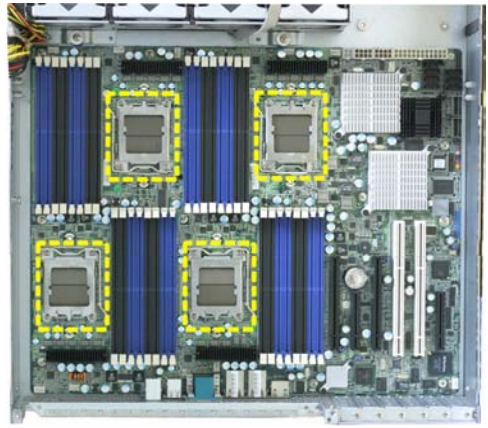


4. Pull out the pre-installed air duct so you will locate the CPU sockets, the following images show in details.

A



B



Note:

The system supports up to four CPUs, CPU0 must be installed first follow by CPU1, CPU2 and CPU3. For CPU sequence please refer to Chapter 1.5.3.

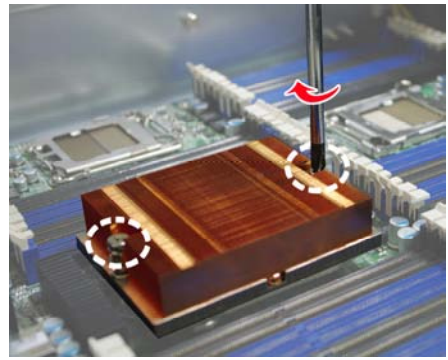
5. Take off the CPU protection cap;

6. Lift up the CPU lever to unlock the socket, Open the socket cover as the arrow shows;

7. Place the CPU in the socket, ensuring that pin1 is correctly located;

8. Closer the socket cover and press the CPU lever down to secure the CPU;

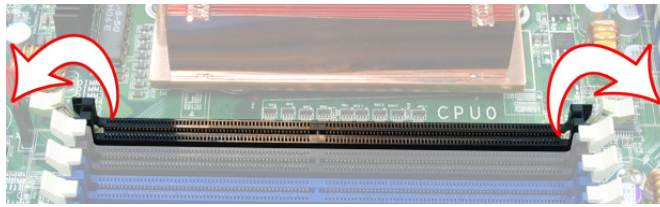
9. Place the heatsink on top of the CPU and screw it as below;



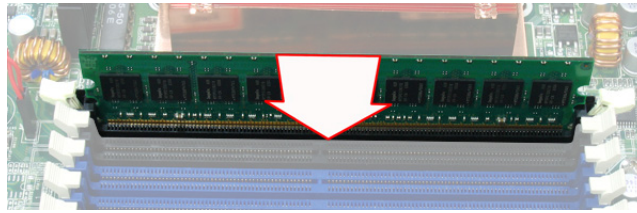
2.1.3 Installing the Memory

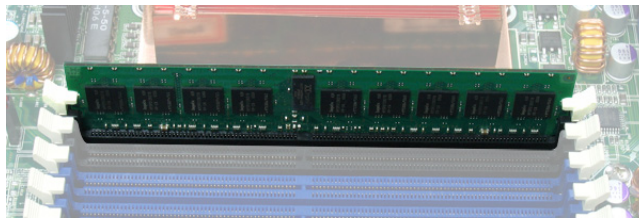
Follow these instructions to install the memory modules on the motherboard. Your TN68-B4989 boasts up to 32 DIMM sockets.

1. Press the memory slot locking levers in the direction of the arrows as shown in the following illustration.



2. Align the memory module with the slot. When inserted properly, the memory slot locking levers lock automatically onto the indentations at the ends of the module.





NOTE: For optimal system operation, please install memory **in pairs**.

Memory Population Option Table

To correctly install the memory in pairs, please refer to the table on the next page for supported population options. Start installing memory modules from **DIMM6** and **DIMM7**.

CPU / DIMM	Single (CPU0)			Dual (CPU0 and1)			Four (CPU0,1,2 and3)		
Quantity of memory installed	**2**	**4**	**8**	**4**	**8**	**16**	**8**	**16**	**32**
CPU0_DIMM0			√			√			√
CPU0_DIMM1			√			√			√
CPU0_DIMM2			√			√			√
CPU0_DIMM3			√			√			√
CPU0_DIMM4		√	√		√	√		√	√
CPU0_DIMM5		√	√		√	√		√	√
CPU0_DIMM6	√	√	√	√	√	√	√	√	√
CPU0_DIMM7	√	√	√	√	√	√	√	√	√
CPU1_DIMM0						√			√
CPU1_DIMM1						√			√
CPU1_DIMM2						√			√
CPU1_DIMM3						√			√
CPU1_DIMM4					√	√		√	√
CPU1_DIMM5					√	√		√	√
CPU1_DIMM6				√	√	√	√	√	√
CPU1_DIMM7				√	√	√	√	√	√
CPU2_DIMM0									√
CPU2_DIMM1									√
CPU2_DIMM2									√
CPU2_DIMM3									√
CPU2_DIMM4								√	√
CPU2_DIMM5								√	√
CPU2_DIMM6							√	√	√
CPU2_DIMM7							√	√	√
CPU3_DIMM0									√
CPU3_DIMM1									√
CPU3_DIMM2									√
CPU3_DIMM3									√
CPU3_DIMM4								√	√
CPU3_DIMM5								√	√
CPU3_DIMM6							√	√	√
CPU3_DIMM7							√	√	√

2.1.4 Installing Expansion Cards

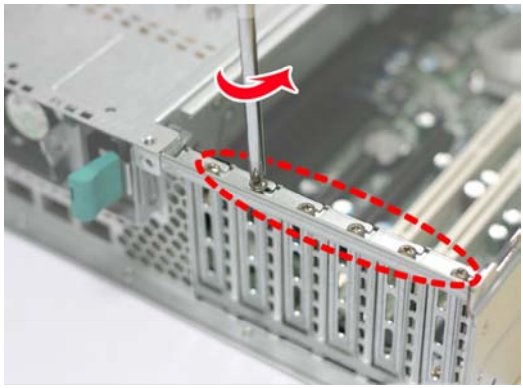
2.1.4.1 B4989T68W8HR-SI

B4989T68W8HR-SI has **six** expansion slots:

- **2 × PCI-E×16 slots**
- **2 × PCI-E×4 slots**
- **2 × PCI-X 133MHz slots**

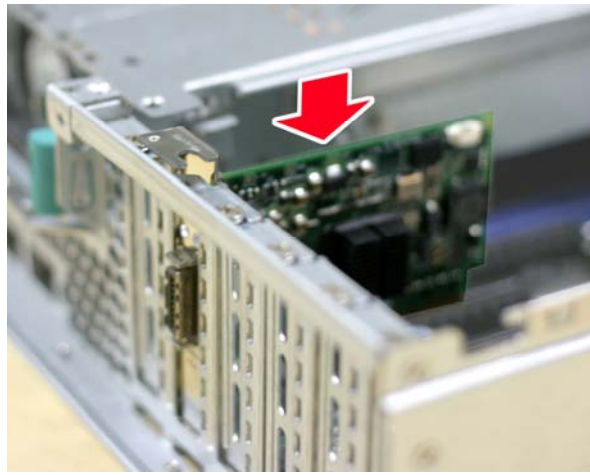
Follow these instructions to install any of the above kinds of expansion cards.

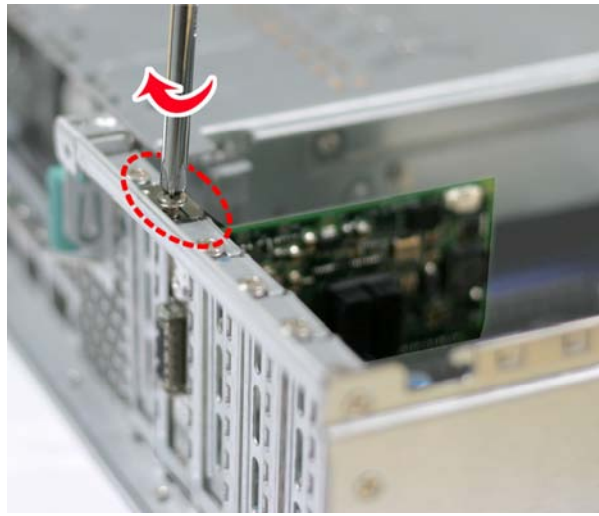
1. Locate the expansion slot on the motherboard, unscrew the bracket from the slot you want to use.



2. Take the bracket out from the slot in the direction of the arrow shows.

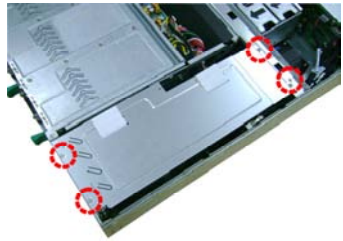
3. Insert the card into the slot and secure it with the screw you removed from the bracket.



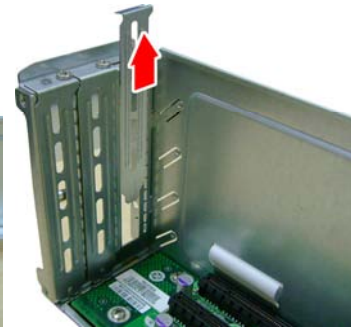


2.1.4.2 B4989T68W8HR-LE

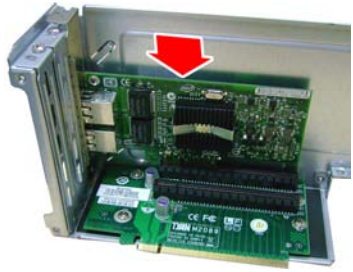
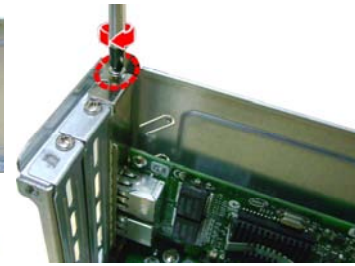
1. Unscrew the PCI holder and lift the holder up from the chassis.



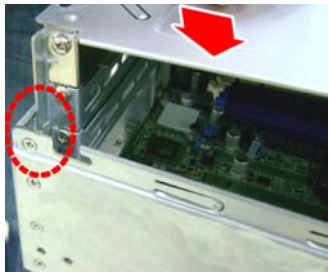
2. Turn over the PCI holder and unscrew the bracket from the holder.

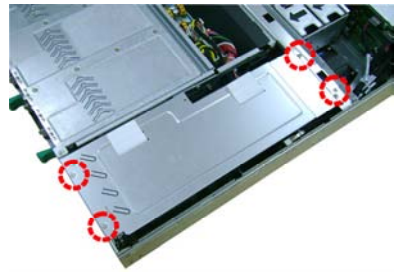


3. Insert the PCI-E card into the slot and secure it to the holder.

4. Replace the PCI holder to the chassis, make sure that the holder is correctly inserted into the socket as the images shows you.





5. Secure the holder to the chassis follow the above steps in reverse.

2.1.5 Installing Hard Drives

The TN68-B4989 supports eight 3.5” hard drives. Follow these instructions to install a hard drive.

1. Press the locking lever latch and pull the locking lever open.

2. Slide the HDD tray out.

3. Place a hard drive into the HDD tray.

4. Turn over the HDD unit and secure the HDD using 4 HDD screws.

5. Reinsert the HDD tray into the chassis and press the locking lever to secure the tray.

2.2 Rack Mounting

After installing the necessary components, the Transport TN68-B49 -89 can be mounted in a rack using the supplied rack mounting kit.

Rack mounting kit

Rail with Bracket x 2

Mounting Ears x 2

Screw Sack x 1

2.2.1 Installing the Server in a Rack

Follow these instructions to mount the TN68-B4989 into an industry standard 19" rack.

Note:

Before mounting the Transport TN68-B4989 in a rack, ensure that all internal components have been installed and that the unit has been fully tested. Maintenance can be performed on the unit while in a rack but it is preferable to install the device in a fully operational condition.

Screw Sack

A **B** **C**

Including

A: M4 x 5 x P0.7----10pcs

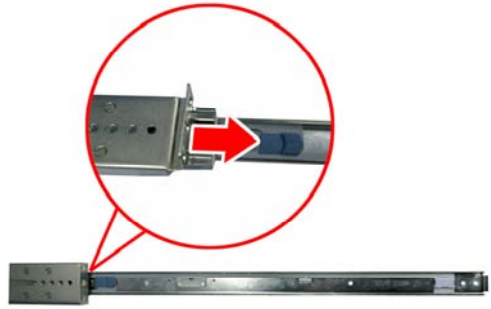
B: M6 x 13 ----------10pcs

C: M6 ----------10pcs

2.2.2 Installing the inner Rails to the Chassis

1. Screw the mounting ear to each side of TN68 as shown using 2 screws from the supplied screws kit.

2. Push the latch key and draw out the inner rails from sliding rails.



3. Install inner rails to left and right sides of chassis using 3 M4 x 5 x P0.7 (A) screws for each side.

2.2.3 Installing the Outer Rails to the Rack

Secure the outer rail to the rack using the rail and 4 M4 x 5 x P0.7 (A) screws for each side (A). Secure the mounting brackets from inside, not outside, of the rack (B).

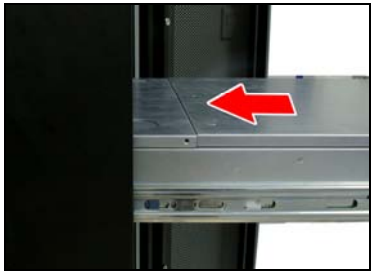
A

B

2.2.4 Rack mounting the Server

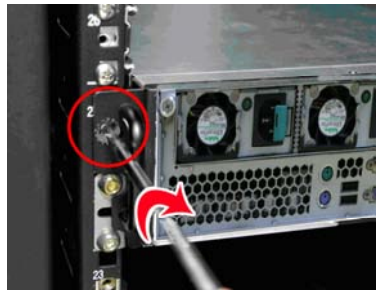
1. Draw out the middle rail to the latch position.

2. Lift the chassis and then insert the inner slide rails into the middle rails.



3. Push the chassis in and pull the latch key (A). Then push the whole system into the rack (B).

4. Secure the mounting ears of chassis to the rack with 2 M6 x 13 (B) screws.



Note:

To avoid injury, it is strongly recommended that two people lift the TN68-B4989 into the place while a third person screws it to the rack.

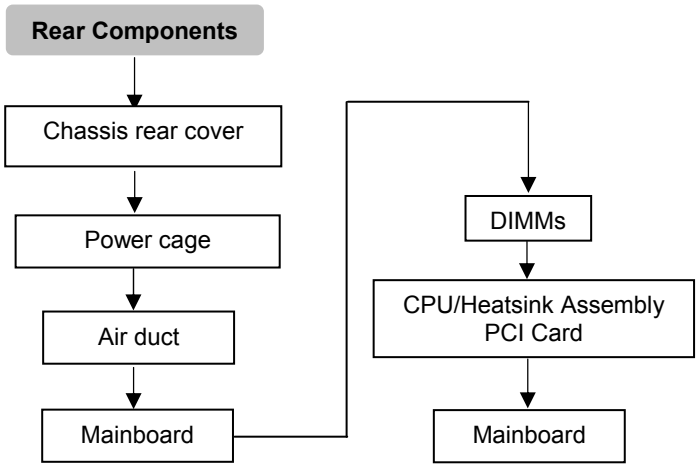
Chapter 3: Replacing Pre-Installed Components

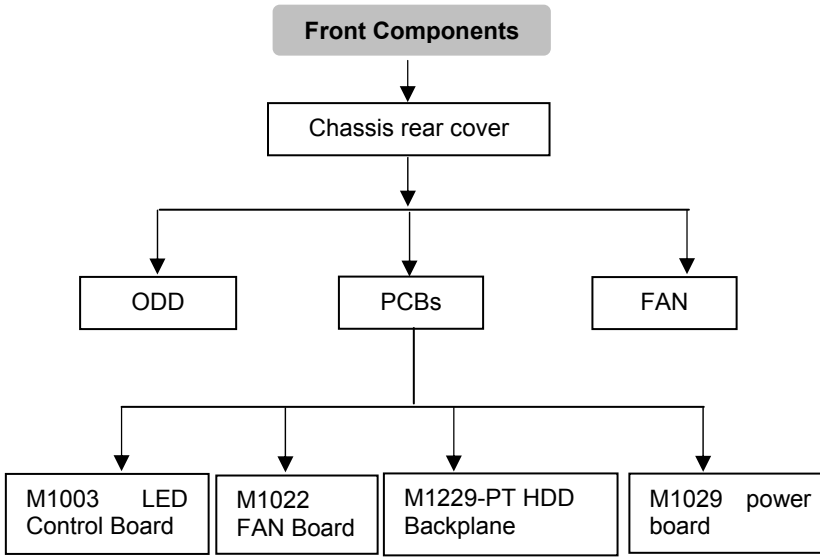
3.1 Introduction

This chapter explains how to replace the pre-installed components, including the Motherboard, M1003 LED control board, M1229-PT HDD backplane, M1022 FAN board, System fan, ODD drive, Power supply unit etc..

3.2 Disassembly Flowchart

The following flowchart outlines the disassembly procedure.




Front Components
Chassis rear cover
ODD
PCBs
FAN
M1003 LED Control Board
M1022 FAN Board
M1229-PT HDD Backplane
M1029 power board

3.3 Removing the Cover

Before replacing any parts you must remove the chassis cover.

Follow **Chapter 2.1.1** to remove the cover of the Transport TN68--B4989.

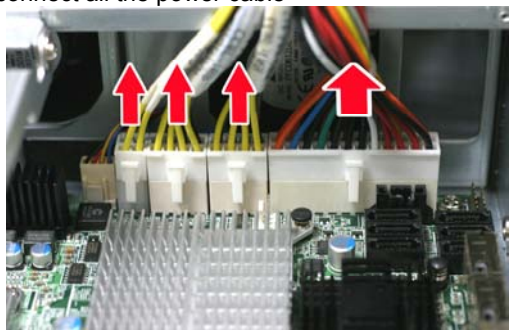
3.4 Replacing Motherboard Components

Follow these instructions to replace motherboard components, including the motherboard.

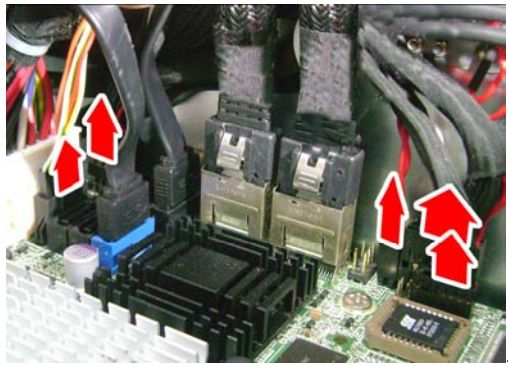
3.4.1 Disconnecting All Motherboard Cables

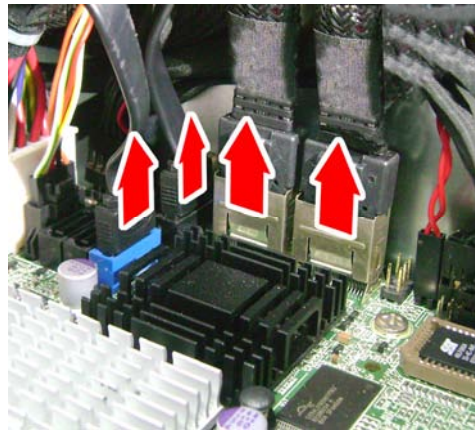
Before replacing the motherboard or certain components, remove cables connected to the motherboard. Follow these instructions to remove all motherboard cabling.

1. Disconnect all the power cable



2. Disconnect SATA/SAS cable, DVD Rom drive cable, USB cable and front panel cable.

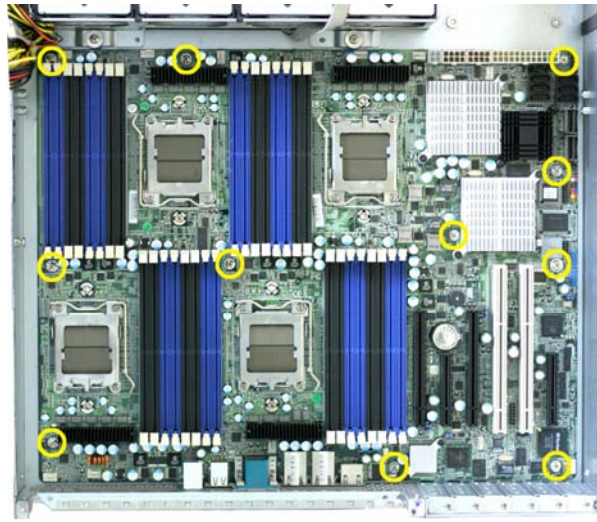




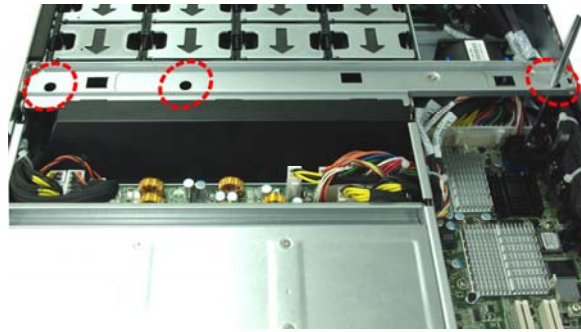
3.4.2 Removing the Motherboard

After removing all of the aforementioned cables, follow these instructions to remove the motherboard from the chassis.

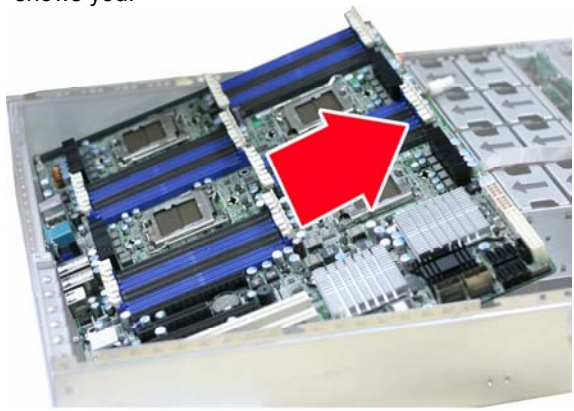
1. Remove the heatsinks and processors if installed.
2. Remove the eleven screws securing the motherboard to the chassis.



Note: You may need to unscrew the front three screws through the holes in the bracket.



3. Carefully lift the motherboard from the chassis as the image shows you.



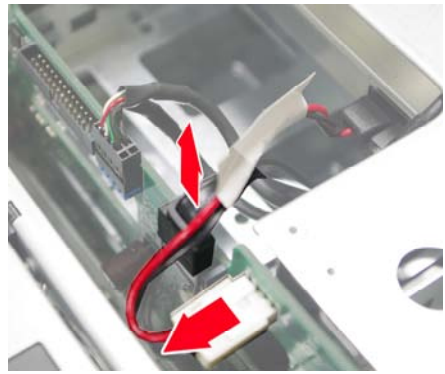
Note:

The motherboard is too large to lift straight out .Lift the front edge of the board to an angle of about 45 then slides the whole board out.

3.5 Replacing the Slim DVD-ROM

Follow these instructions to replace the DVD-ROM.

1. Remove the cables from the HDD backplane.



2. Push the stopper in the direction as the arrow shows.

3. Push the DVD through the front of the TN68-B4989.

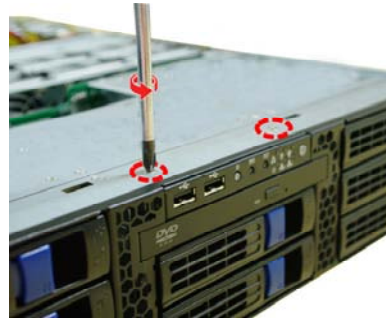
4. Replace the DVD.

5. Connect the DVD to the backplane follow the above steps in reverse.

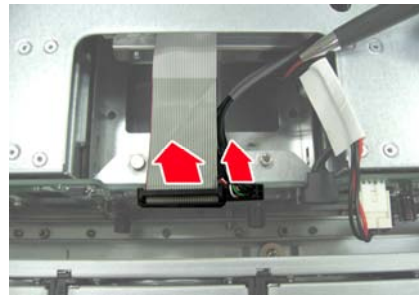
3.6 Replacing the LED Control Board

Follow these instructions to replace the M1003 LED control board.

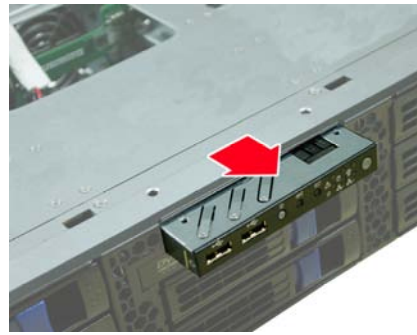
1. Remove the two screws securing the LED control board unit to the chassis.



2. Unplug the cables from the connectors on the HDD backplane.



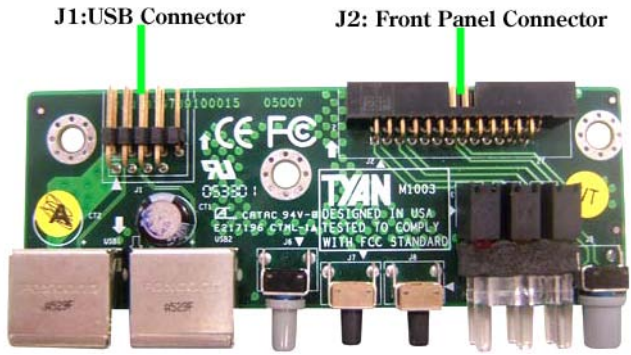
3. Push the LED control board unit out.
(**Note**: You may need a screwdriver to push the board at the rear side.)



4. Remove three screws securing the LED control board to the bracket.

5. Lift the LED control board free from the chassis. After replacem--ent, insert the unit into the chassis following the above proced--ures in reverse.

3.6.1 M1003 LED Control Board Features



3.6.2 M1003 LED Control Board Connector Pin Definition

J2 Front Panel Connector:

Definition	Pin	Pin	Definition
HDLED+	1	2	HDLED-
RESET+	3	4	RESET-
PW_LED+	5	6	PW_LED-
WLED+	7	8	WLED-
OCJ_SMBDAT	9	10	ICH_SMBCLK
EXT_INT	11	12	VOLTAGE5
V5SB	13	14	INTRU#
PWR_SW+	15	16	PWR_SW-
LAN1_LED+	17	18	LAN1_LED-
LAN2_LED+	19	20	LAN2_LED-
Reserve	21	22	Reserve
ID_LED+	23	24	ID_LED-
ID_SW+	25	26	ID_SW-
KEY PIN	68	28	NC

J1 USB Connector:

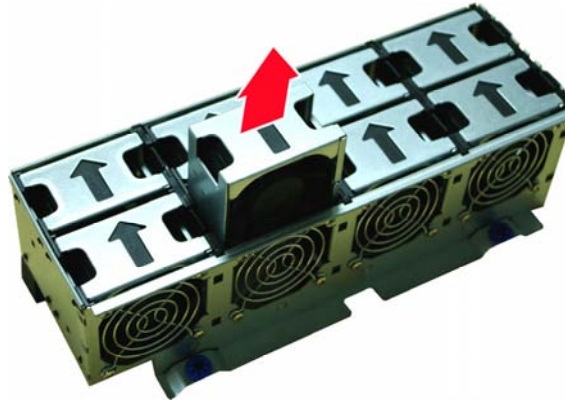
Definition	Pin	Pin	Definition
VCC5	1	2	VCC5
USB1-	3	4	USB0-
USB1+	5	6	USB0+
GND	7	8	GND
KEY PIN	9	10	GND

3.7 Replacing the System Fan

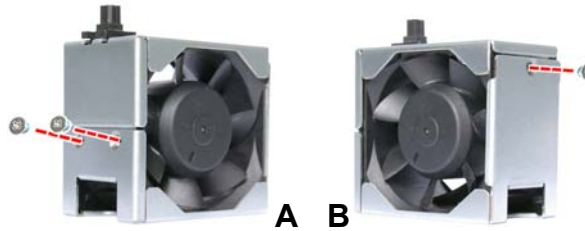
1. Press the button in the arrow direction and lift out the fan needing replacing.

A

B



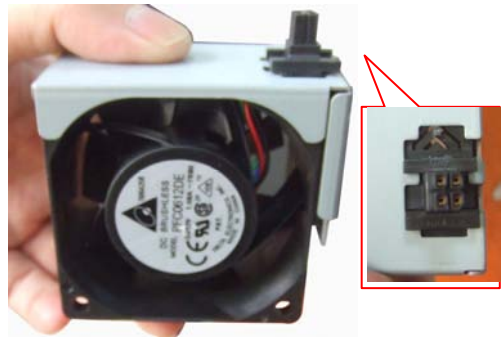
2. Remove two screws on one side (A) and one screw on the other side of the fan bracket (B).



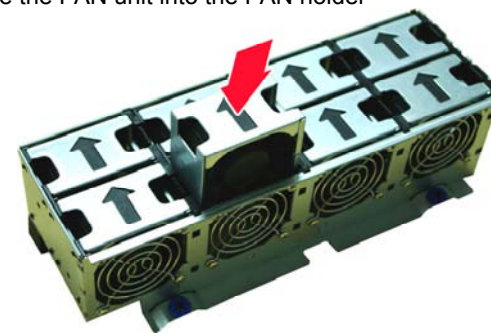
A B

3. Open the fan bracket and move the connector of the fan in the arrow's direction.

4. Install a new fan into the bracket.



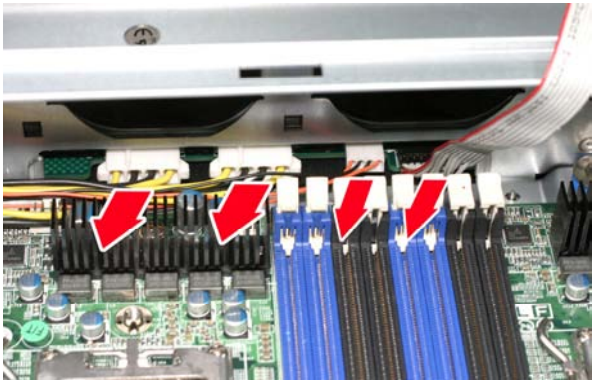
5. Place the FAN unit into the FAN holder



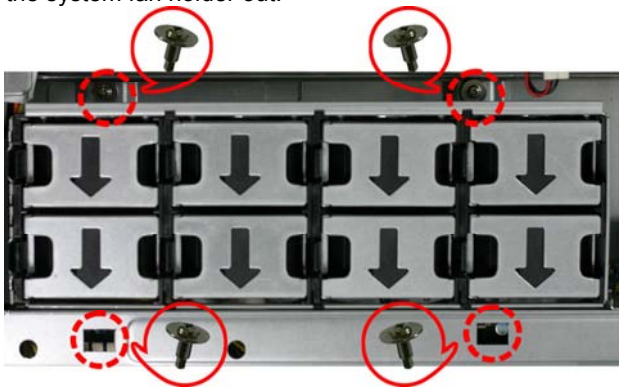
6. Reinsert the fan holder into the chassis and fix it with four screws.

3.8 Replacing the M1022 Fan Board

1. Disconnect all cables connected to the Fan board.

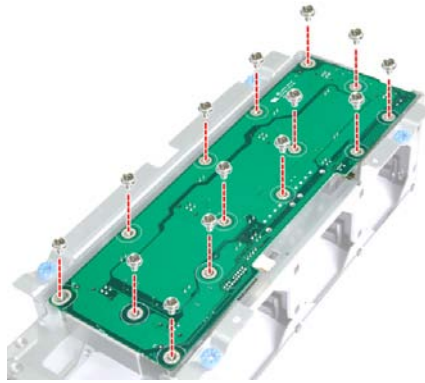


2. Remove screws to release the system fan holder. And lift the system fan holder out.



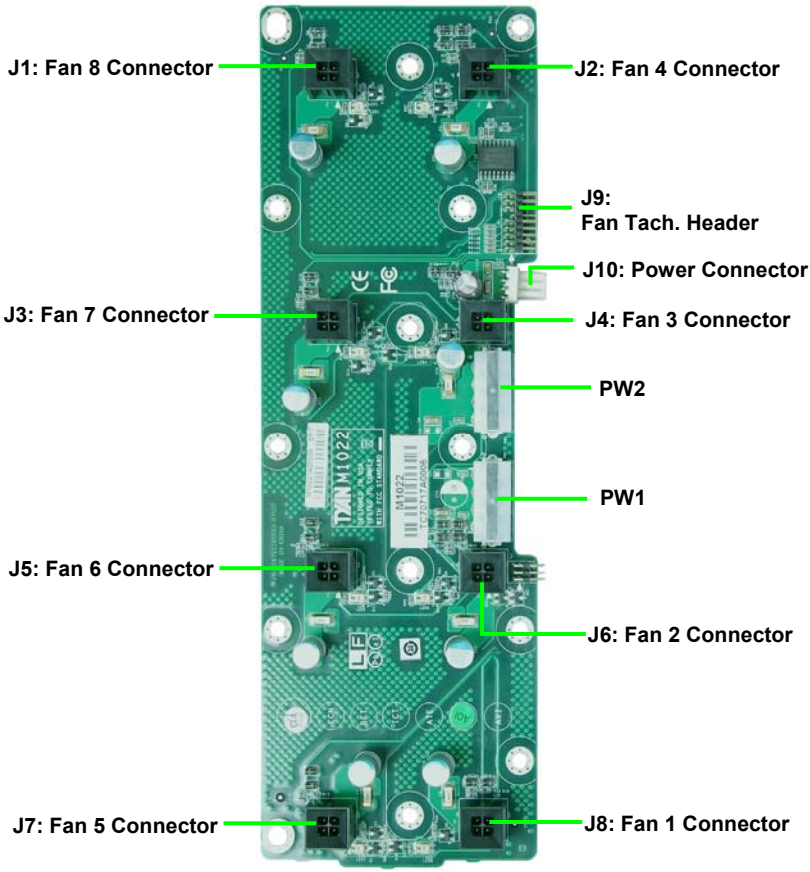
3. Release all system fans from the fan holder (Refer to 3.7.1)

4. Turn over the system fan holder to remove fourteen screws securing the M1022 Fan Board.



5. Secure a new M1022 Fan Board to the fan holder and install the whole unit into the chassis following the above steps in reverse.

3.8.1 M1022 Fan Board Features



3.8.2 M1022 Fan Board Connector Pin Definition

J1~J8: Hot-swapped Fan Connectors (2Pin x 2)

Definition	Pin	Pin	Definition
POWER	1	2	FAN_PWM
GND	3	4	FAN_TACH

J9: Fan Tach.Header (9Pin x 2)

Definition	Pin	Pin	Definition
FAN1_TACH	1	2	FAN6_TACH
FAN2_TACH	3	4	FAN7_TACH
FAN2_TACH	5	6	FAN8_TACH
FAN4_TACH	7	8	FAN_PWM5
FAN5_TACH	9	10	FAN_PWM4
GND	11	12	KEY PIN
GND	13	14	FAN_PWM3
HWM_SMBUSC_2	15	16	HWM_INT_1
HWM_SMBUSD_2	17	18	FAN_PWM6

J10: Power Connector (4Pin x 1)

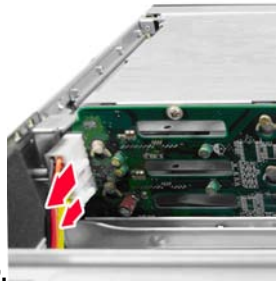
Pin	1	2	3	4
Definition	3.3V	GND	GND	3.3V

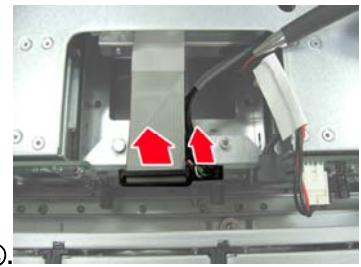
PW1 & PW2 connectors (4Pin x 1)

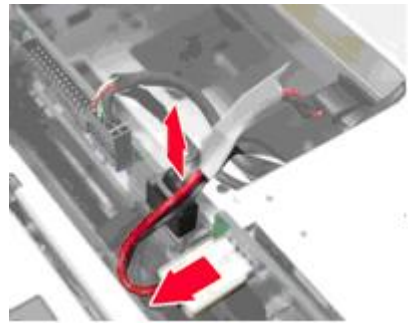
Pin	1	2	3	4
Definition	+12V	GND	GND	+12V

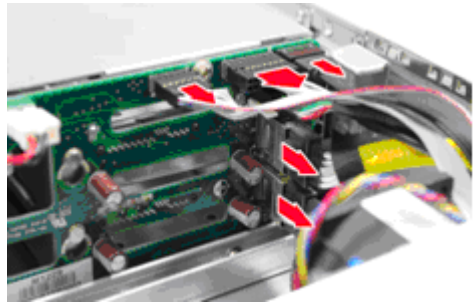
3.9 Replacing the M1229-PT HDD Backplane

Step 1: Disconnect all cables connected to M1229-PT HDD backplane.

①. 

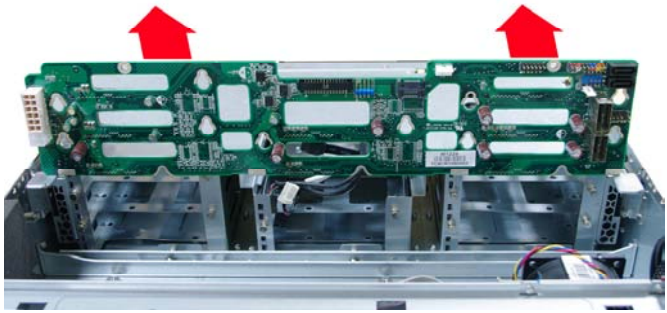
②. 

③. 

④. 

Step 2: Remove the two screws securing M1229-PT HDD backplane to the chassis base.

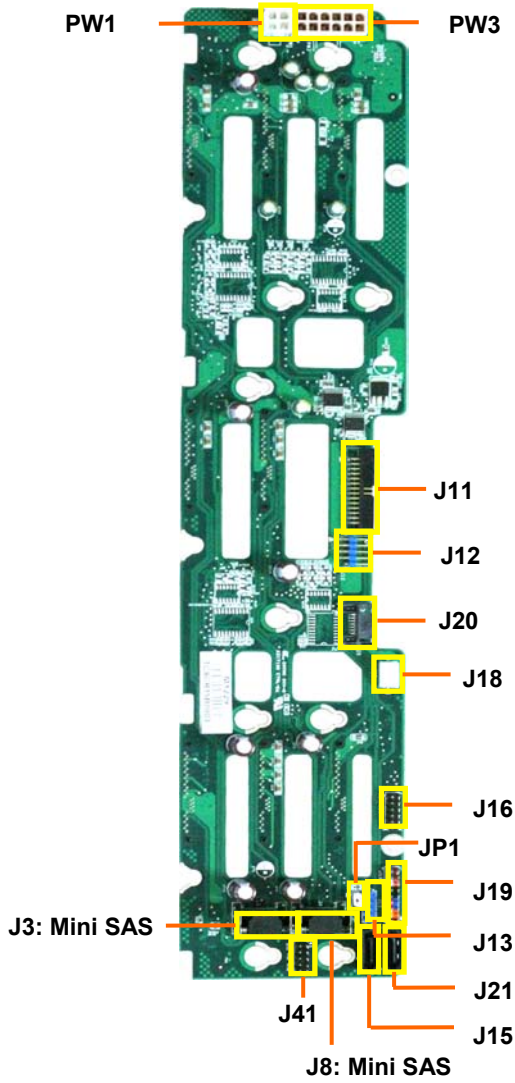
Step 3: Lift the M1229-PT HDD backplane kit from the chassis.



Step 4: Replace a new M1229-PT HDD Backplane and reinstall it into the chassis following the above steps in reverse.

3.9.1 M1229-PT HDD Backplane Features

Front View:



Rear View:

3.9.2 M1229-PT HDD Backplane Connector Pin Definitions

Input Power Connectors:
PW3:

SIGNAL	PIN	PIN	SIGNAL
GND	1	2	+12V
GND	3	4	+12V
GND	5	6	+12V
GND	7	8	+5V
GND	9	10	+5V
GND	11	12	+3.3V

PW1:

SIGNAL	PIN	PIN	SIGNAL
GND	1	2	+12V
GND	3	4	+12V

J18: 4P DVD-ROM:

PIN	1	2	3	4
SIGNAL	+12V	GND	GND	+5V

J41: CPLD Header:

SIGNAL	PIN	PIN	SIGNAL
CPLD_JTAG_TCK	1	6	NC
GND	2	7	NC
CPLD_JTAG_TDO	3	8	NULL
VCC-	4	9	CPLD_JTAG_TDI
CPLD_JTAG_YMS	5	10	GND

J12/J13: USB Header:

SIGNAL	PIN	PIN	SIGNAL
VDD_5_RUN	1	6	USB0+
VDD_5_RUN	2	7	GND
USB1-	3	8	GND
USB0-	4	9	DIE
USB1+	5	10	GND

J20/J21: DVD/SATA Connector:

SIGNAL	PIN	PIN	SIGNAL
GND	1	6	SATA_DVD_RXP1
SATA_DVD_TXP1	2	7	GND
SATA_DVD_TXN1	3	G1	GND
GND-	4	G2	GND
SATA_DVD_RXN1	5		

J11: Front panel Header:

SIGNAL	PIN	PIN	SIGNAL
NC	**1**	**2**	NC
ID_SW-	**3**	**4**	GND ID_SW+
ID_LED-	**5**	**6**	ID_LED+
NC	**7**	**8**	NC
LAN2_LED-	**9**	**10**	LAN2_LED+
LAN1_LED-	**11**	**12**	LAN1_LED+
PWR_SW-	**13**	**14**	PWR_SW+
NC	**15**	**16**	NC
VOLTAGE5	**17**	**18**	EXT_INT
NC	**19**	**20**	NC
WLED-	**21**	**22**	WLED+
PW_LED-	**23**	**24**	PW_LED+
RESET-	**25**	**26**	RESET+
HDLED-	**27**	**28**	HDLED+

JP1:

	Default; SAS\SATA port0 connect with mini sas connector
	SAS\SATA port0 connect with sata port of motherboard

3.10 Replacing the Power Supply

3.10.1 Replace the power supply

To replace the power supply follow these instructions.

1. Press the tab as shown in the diagram and pull out the power.

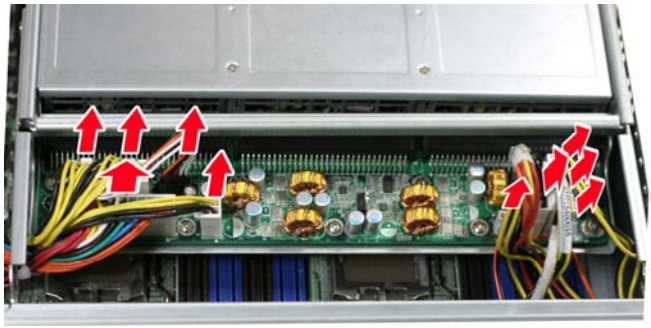
2. Free the power from the power socket.

You can refer to **Chapter 2.1.2** for the above steps.

3. Replace a new single power (FRU NO.: CPSU-0350) and reinsert it into the power socket following the above steps in reverse.

3.10.2 Replace the power board M1029

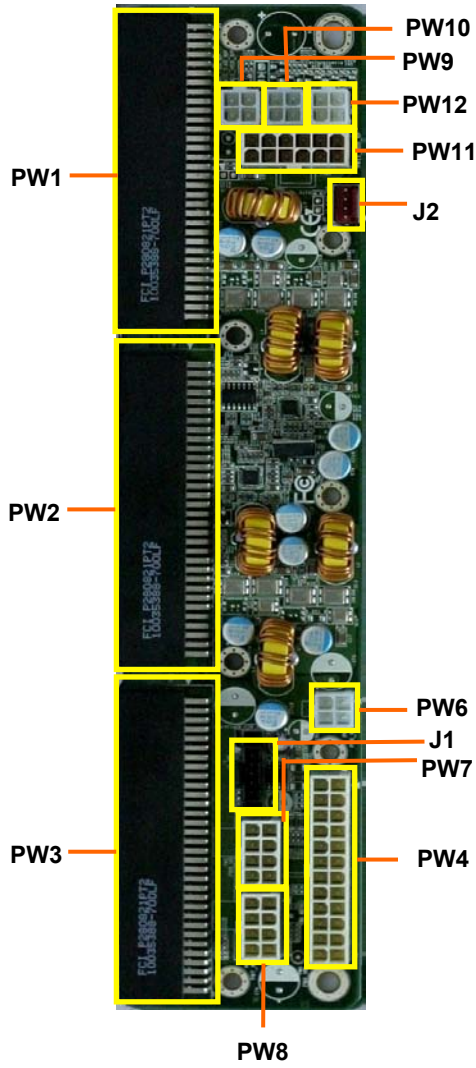
1. Disconnect all the cables connect to M1029.



2. Remove the 9 screws securing M1029 power board to the chassis base.

3. Renew the M1029 and fix it to the chassis following the steps in reverse.

3.10.3 M1029 power board Features



M1029 power board Connector Pin Definitions:

PW4:

SIGNAL	PIN	PIN	SIGNAL
+3.3V	1	13	+3.3V
+3.3V	2	14	- 12V
GND	3	15	GND
+5V	4	16	PS_ON
GND	5	17	GND
+5V	6	18	GND
GND	7	19	GND
PWRGD	8	20	Reserve
5VSB	9	21	+5V
+12V	10	22	+5V
+12V	11	23	+5V
+3.3V	12	24	GND

PW7 / PW8:

SIGNAL	PIN	PIN	SIGNAL
GND	1	5	+12V
GND	2	6	+12V
GND	3	7	+12V
GND	4	8	+12V

PW 6 / 9 / 10 /12:

SIGNAL	PIN	PIN	SIGNAL
GND	1	3	+12V
GND	2	4	+12V

PW11:

SIGNAL	PIN	PIN	SIGNAL
GND	1	7	+12V
GND	2	8	+12V
GND	3	9	+12V
GND	4	10	+5V
GND	5	11	+5V
GND	6	12	+3.3V

J2:

PIN	1	2	3	4
SIGNAL	+3.3V	GND	GND	+3.3V

J1:

PIN	1	2	3	4	5
SIGNAL	SMBCLK	SMBDAT	RSVD	GND	+3.3V

Appendix I: BIOS Differences

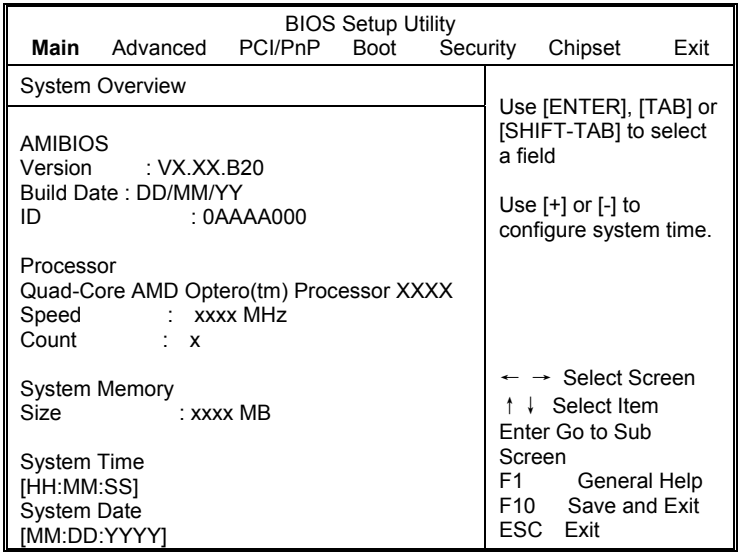
The BIOS of B4989 is similar to S4989 while there are some differences in menus. The following table displays those differences in details. For a complete view of S4989 BIOS, please refer to the motherboard manual.

1. BIOS Version information

S4989:

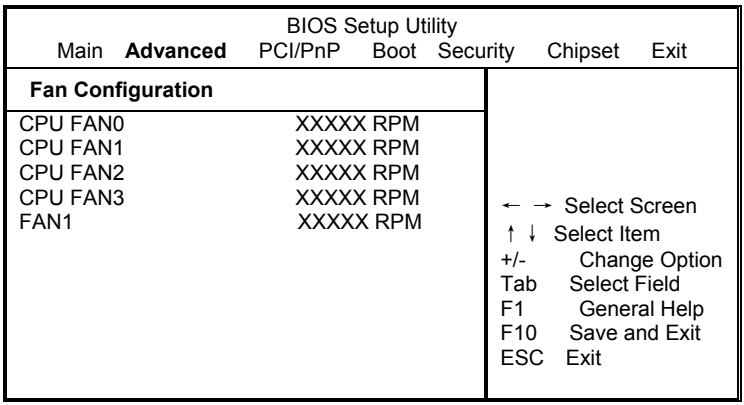
BIOS Setup Utility **Main** Advanced PCI/PnP Boot Security Chipset Exit	
System Overview	
AMIBIOS Version : VX.XX Build Date : DD/MM/YY ID : 0AAAA000 Processor Quad-Core AMD Optero(tm) Processor XXXX Speed : xxxx MHz Count : x System Memory Size : xxxx MB System Time [HH:MM:SS] System Date [MM:DD:YYYY]	Use [ENTER], [TAB] or [SHIFT-TAB] to select a field Use [+] or [-] to configure system time. ← → Select Screen ↑ ↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit

B4989:

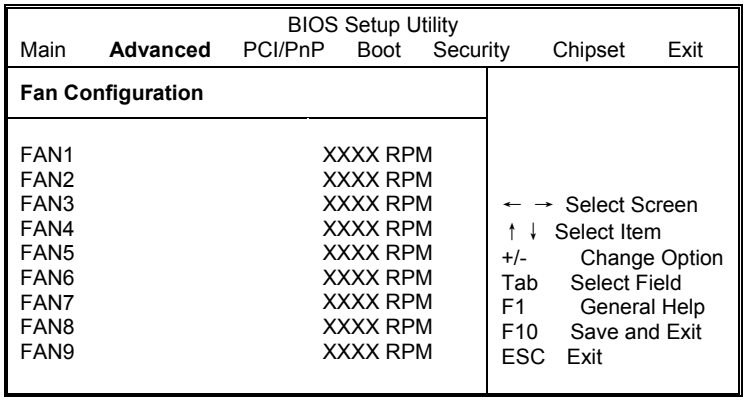


2. FAN Configuration Sub-Menu

S4989:

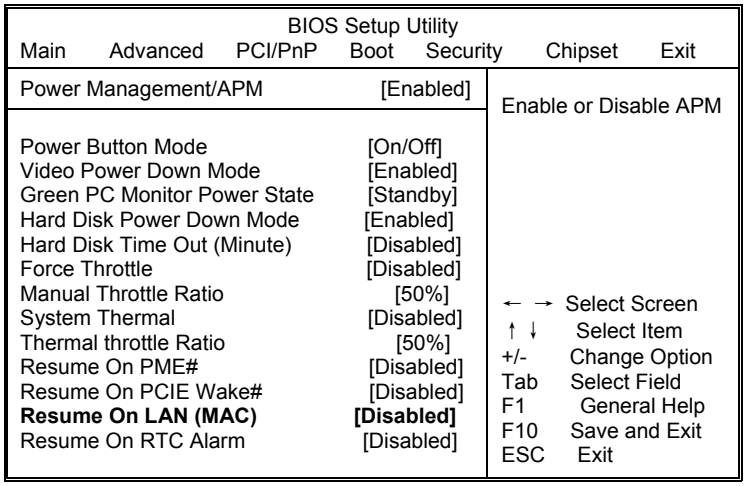


B4989:



3. APM Configuration

S4989:


BIOS Setup Utility
Main Advanced PCI/PnP Boot Security Chipset Exit
Power Management/APM [Enabled]
Enable or Disable APM
Power Button Mode [On/Off]
Video Power Down Mode [Enabled]
Green PC Monitor Power State [Standby]
Hard Disk Power Down Mode [Enabled]
Hard Disk Time Out (Minute) [Disabled]
Force Throttle [Disabled]
Manual Throttle Ratio [50%]
System Thermal [Disabled]
Thermal throttle Ratio [50%]
Resume On PME# [Disabled]
Resume On PCIE Wake# [Disabled]
Resume On LAN (MAC) [Disabled]
Resume On RTC Alarm [Disabled]
← → Select Screen
↑ ↓ Select Item
+/- Change Option
Tab Select Field
F1 General Help
F10 Save and Exit
ESC Exit

B4989:

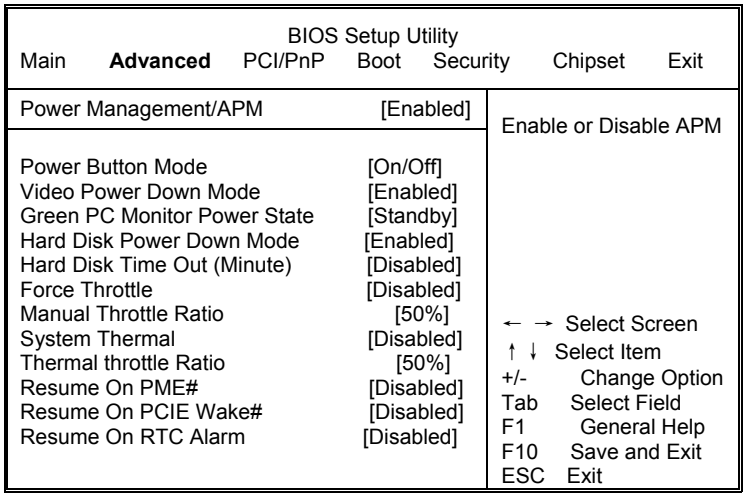

BIOS Setup Utility
Main Advanced PCI/PnP Boot Security Chipset Exit
Power Management/APM [Enabled]
Enable or Disable APM
Power Button Mode [On/Off]
Video Power Down Mode [Enabled]
Green PC Monitor Power State [Standby]
Hard Disk Power Down Mode [Enabled]
Hard Disk Time Out (Minute) [Disabled]
Force Throttle [Disabled]
Manual Throttle Ratio [50%]
System Thermal [Disabled]
Thermal throttle Ratio [50%]
Resume On PME# [Disabled]
Resume On PCIE Wake# [Disabled]
Resume On RTC Alarm [Disabled]
← → Select Screen
↑ ↓ Select Item
+/- Change Option
Tab Select Field
F1 General Help
F10 Save and Exit
ESC Exit

Table of Differences

	B4989	S4989
Version	VX.XX.B20	VX.XX
FAN	FAN1 FAN2 FAN3 FAN4 FAN5 FAN6 FAN7 FAN8 FAN9	CPU FAN0 CPU FAN1 CPU FAN2 CPU FAN3 FAN1
APM	/	Resume On LAN (MAC)

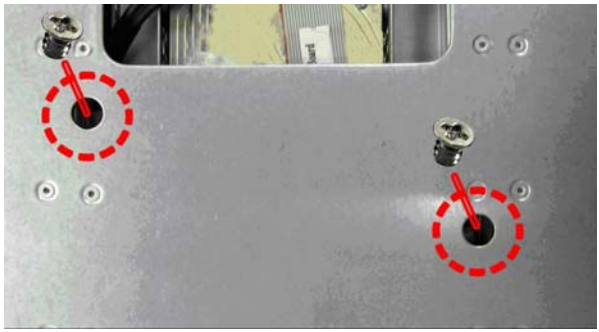
Appendix II: Installing the Internal 2.5”HDD

Considering for a multiple choice, the slim DVD-ROM could be replaced by an internal 2.5” SATA HDD in your TN68-B4989. You can choose flexibly in practical application. The internal 2.5”HDD from SATA port has no interference with the other eight 3.5”HDDs from SAS port.

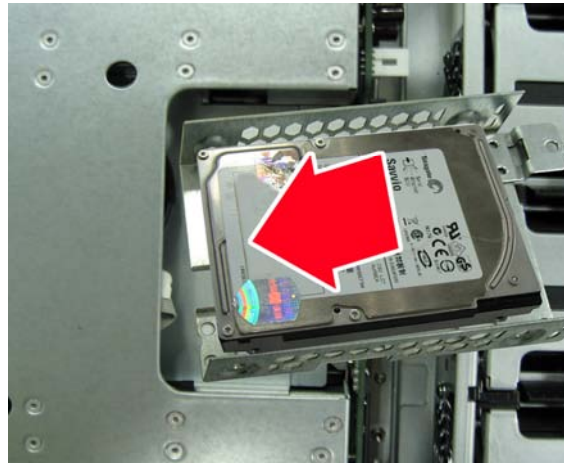
Step 1: Follow the instructions in Chapter 3.5 to remove the pre--installed slim DVD-ROM;

Step 2: Insert the internal 2.5”HDD bay into the 2.5”HDD cage thro--ugh the front panel;

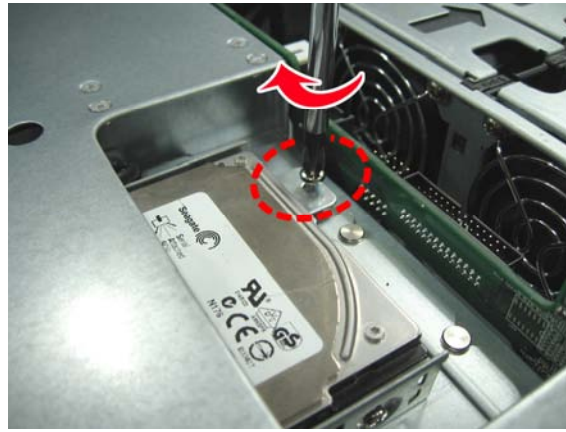
Step 3: Fix the 2.5”HDD bay onto the chassis using two screws;



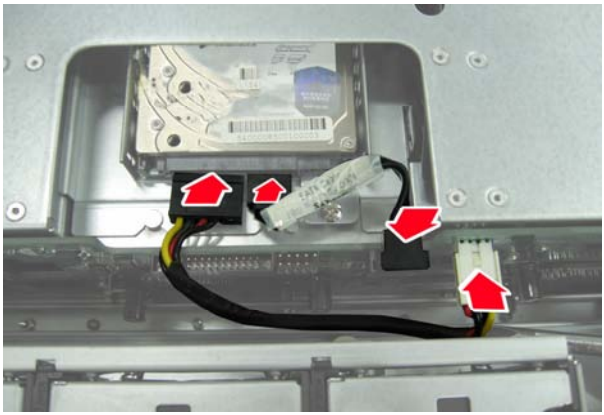
Step 4: Put the hard disk onto the HDD tray and then place them into the 2.5”HDD bay;



Step 5: Screw the HDD onto the HDD tray as the following image shows you;

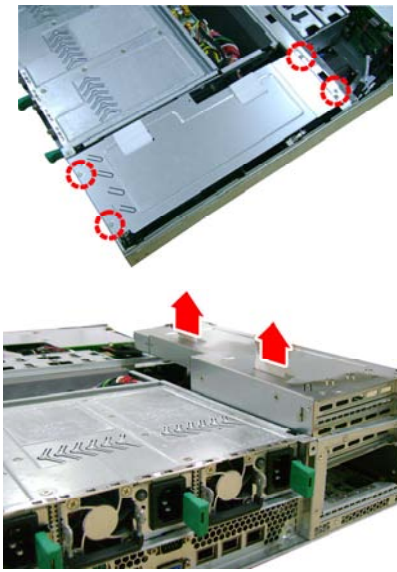


Step 6: Connect the data cables.



Appendix III: Replace Pre-installed PCI-E Riser Card

Step 1: Unscrew the PCI holder and lift it up from the chassis.



Step 2: Turn over the PCI holder and unscrew the M2089 riser card from the holder.

Step 3: B4989T68W8HR-LE supports two types of riser cards, choose the riser card you need and replace it follow the above steps in reverse.

M2089 PCI-E Riser Card

M2090 PCI-E Riser Card

Appendix IV: Cable Connection Tables

SATA Cables

Table 1: M1229-PT HDD Backplane to Motherboard

M1229-PT	Connect to	Motherboard
J21 SATA Connector	→	J14 SATA0
J15 SATA Connector	→	J15 SATA1

SAS Cables

Table 2: M1229-PT HDD Backplane to Motherboard

M1229-PT	Connect to	Motherboard
J8 mini SAS Connector	→	J16 mini SAS Connector
J3 mini SAS Connector	→	J17 mini SAS Connector

FAN Cable

Table 3: M1022 Fan Board to Motherboard

M1022	Connect to	FAN BOARD
J9 Fan Connector	→	J29 Fan Connector

SMBus Cable

Table 4: M1029 PDB to Motherboard

M1029	Connect to	Motherboard
J1 SMBus Connector	→	J8 SMBus Connector

Power Supply Cables

Table 5: M1029 to Motherboard

M1029	Connect to	Motherboard
PW4 Power Connector	→	PW1 Power Connector
PW7 Power Connector	→	PW3 Power Connector
PW8 Power Connector	→	PW2 Power Connector
PW6 Power Connector	→	J2 Power Connector

Table 6: M1029 to M1022 Fan Board

M1029	Connect to	M1022
PW9 Power Connector	→	PW1 Power Connector
PW10 Power Connector	→	PW2 Power Connector
J2 Power Connector	→	J10 Power Connector

Table 7: M1029 PDB to M1229-PT HDD Backplane

M1029	Connect to	M1229-PT
PW11 Power Connector	→	PW3 Power Connector
PW12 Power Connector	→	PW1 Power Connector

Other Cables

Table 8: M1003 Front Panel LED Board Related Cable

M1003	Connect to	M1229-PT
J2 Front Panel connector	→	J11 Front Panel connector
J1 USB Header	→	J12 USB Header

Table 9: M1229-PT HDD Backplane Related Cables

M1229-PT	Connect to	Motherboard
J19 FPI Header	→	J19 FPI Header
J16 FPII Header	→	J9 FPII Header
J13 USB Header	→	J20 USB Header

Table 10: DVD or Internal 2.5" HDD (option) Related Cables

DVD or Internal 2.5" HDD (option)	Connect to	M1229-PT
Data Connector	→	J20 SATA Connector
Power Connector	→	J18 Power Connector

Appendix V: FRU Parts Table

TN68-B4989 FRU Parts

Item	Model Number	Part Number	Picture	Quantity	Description
Motherboard	S4989WG2NR-SI	–		1	(4) AMD Opteron™ Rev. F 8000/8300 series dual-core/ quad-core processors support (B4989T68W8HR-SI SKU)
	S4989WG3NR-LE	–		1	(4) AMD Opteron™ Rev. F 8000/8300 series dual-core/ quad-core processors support (B4989T68W9HR-LE SKU)
Chassis Unit	CCHA-0300	432775400001		1	TN68 2U Chassis (B4989T68W8HR-SI SKU)
	CCHA-0360	432775400003		1	TN68 2U Chassis (B4989T68W8HR-LE SKU)
Chassis Top Cover	CCCV-0160	340775400005		1	TN68 Front Top Cover
	CCCV-0161	342775400025		1	TN68 Rear Top Cover
DVD Dummy Cover	CMPT-0170	342775400026		1	TN68 DVD Dummy Cover
HDD Tray	CHDT-0130	340746600039		8	Removable 3.5" HDD Tray
	CHDT-0111	340765400021		1	Internal 2.5" HDD Tray
PCI holder	CMPT-0180	340775400011		1	PCI holder (B4989T68W8HR-LE SKU)
Power Supply	CPSU-0350	471015200193		3	700W Power Supply Module for 2+1 Redundant Power Solution

Item	Model Number	Part Number	Picture	Quantity	Description
FAN	CFAN-0330	336252012309		8	60*60*38mm Fan, 12000rpm, 4-pin
	CFAN-0094	336252012297		1	60*60*38mm Fan, 12000rpm, 4-pin
Heat Sink & Cooler	CHSK-0310	343771000012		4	CPU Heat Sink
Air Duct	CADT-0270	340775400006		1	Air Duct
PCBA	M1003-ID-RS	541174620001		1	Front Control Board
	M1022	_		1	Fan Adaptor Board
	M1029	_		1	3-Port Power Backplane
	M1229-PT	_		1	SATA/SAS 8-Port HDD Backplane
	M2089			1	(1)PCI-Ex16 to (2)PCI-Ex8 2U Riser Card (B4989T68W9HR-LE SKU)
	M2090			1	PCI-Ex16 to PCI-Ex16 1U Riser Card(B4989T68W9HR-LE SKU)
CPU Backplane	COTH-0160	452746600051		4	CPU Backplane
Peripheral Drives & Parts	CDVD-0060	523410299033		1	Slim Type DVD-ROM, Sliver Color
Rack Mounting Parts	CRAL-0120	340767400010		1	Slide Rail Kit
	CEAR-0130	340767400002		1	Mounting Ear Kit
Cable Set	CCBL-0326	422764400004		2	SATA Cable,250mm
	CCBL-0357	422762900007		1	USB Cable, 200mm

Item	Model Number	Part Number	Picture	Quantity	Description
Cable Set	CCBL-0422	422772300003		1	DVD Power Cable, 110mm
	CCBL-146A	422775400019		1	MB 2x12P Power Cable, 250mm
	CCBL-146B	422775400020		2	MB 2x4P Power Cable, 250mm
	CCBL-146C	422775400013		1	MB 2x2P Power Cable, 250mm
	CCBL-146D	422775400014		1	HDD BP 2x6P Power Cable,400mm
	CCBL-146E	422775400015		1	HDD BP 2x2P Power Cable,350mm
	CCBL-146F	422775400016		2	Fan BP 2x2P Power Cable,300mm
	CCBL-146G	422775400009		1	Fan BP Small 4P Power Cable,400mm
	CCBL-0612	422775400010		1	SMbus Cable,350mm
	CCBL-067H	422775400003		2	Mini-SAS Cable,300mm
	CCBL-032L	422775400021		1	DVD SATA Cable,65mm
	CCBL-072I	422775400023		1	FP2 Cable,250mm
	CCBL-072J	422775400024		1	FP Cable,150mm
	CCBL-072K	422775400028		1	FP Cable,150mm(For M1229 R04)
	CCBL-035G	422775400025		1	FP USB Cable,350mm
	CCBL-072H	422775400017		1	FP1 Cable,350mm
	CCBL-039H	422775400001		1	Fan Control Cable, 400mm
	CCBL-1070	422775400027		1	Internal 2.5" HDD Power Cable,100mm
	CCBL-0310	332810000280		3	A/C Power Cord, US Type, 2440mm
	CCBL-0300	332810000281		3	A/C Power Cord, EU Type, 1800mm

Note:

The table is subject to change without notice. Please visit our Web site at http://www.tyan.com for latest update.

Appendix VI: Technical Support

If a problem arises with your system, you should first turn to your dealer for direct support. Your system has most likely been configured or designed by them and they should have the best idea of what hardware and software your system contains. Hence, they should be of the most assistance for you. Furthermore, if you purchased your system from a dealer near you, take the system to them directly to have it serviced instead of attempting to do so yourself (which can have expensive consequence).

If these options are not available for you then Mitac® Computer Corporation can Besides designing innovative and quality products for over a decade, TYAN® has continuously offered customers service beyond their expectations. TYAN®'s website (http://www.tyan.com) provides easy-to-access resources such as in-depth Linux Online Support sections with downloadable Linux drivers and comprehensive compatibility reports for chassis, memory and much more. With all these convenient resources just a few keystrokes away, users can easily find their latest software and operating system components to keep their systems running as powerful and productive as possible. TYAN® also ranks high for its commitment to fast and friendly customer support through email. By offering plenty of options for users, TYAN® serves multiple market segments with the industry's most competitive services to support them.

"TYAN®'s tech support is some of the most impressive we've seen, with great response time and exceptional organization in general." — Anandtech.com

Please feel free to contact us directly for this service at tech-support@tyan.com

Help Resources:

1. See the beep codes section of this manual.
2. See the TYAN® website for FAQ's, bulletins, driver updates,and other inform--ation: http://www.tyan.com
3. Contact your dealer for help before calling TYAN®.
4. Check the TYAN® user group: alt.comp.periphs.mainboard.TYAN

Returning Merchandise for Service

During the warranty period, contact your distributor or system vendor FIRST for any product problems. This warranty only covers normal customer use and does not cover damages incurred during shipping or failure due to the alteration, misuse, abuse, or improper maintenance of products.

Note:

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service can be rendered. You may obtain service by calling the manufa--cturer for a Return Merchandise Authorization (RMA) nu--mber. The RMA number should be prominently displayed on the outside of the shipping carton and the package should be mailed prepaid.
TYAN® will pay to have the board shipped back to you.

TYAN® Transport TN68-B4989 User's Manual v2.00

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